

Fortunately, the greatest part of this construction program has been completed, since this new decade brought a problem unique to the university's history: severe budget restraints. SUNY reacted by decreasing enrollment goals, dismissing hundreds of employees, leaving many vacated professional positions unfilled, and eliminating several research programs. Tuition was raised to fund construction-in-progress. SUNY's monumental growth rate was slowing for the first time since 1948. The Chancellor's Panel on University Purposes (1970) and the University Commission on Purposes and Priorities (1975) were formed to determine how new cooperative alliances among the campuses could be educationally as well as fiscally beneficial. During the frequent budget crises, the campuses worked together under the SUNY name to make their needs known to the governor and legislature. By the end of the 1970s, SUNY had changed its major focus from building campuses to creating a more effective, efficient system. This new attitude resulted in the development of the Multi-phase Rolling Plan (MRP) in 1980. Its goal was to coordinate "SUNY's educational services and priorities with both public needs and available state resources."

Today, SUNY encompasses a unique system of traditional four-year colleges, research university campuses, academic health science centers, community colleges, colleges of technology, and specialized and statutory col-

leges. Besides four medical schools, SUNY operates three health science centers, specialized colleges of optometry, environmental science and forestry, and a maritime college. Empire State College, SUNY's nontraditional school, offers degree programs through self-paced independent study, and distance learning is available via mentors all over the state.

D. Bruce Johnstone, seventh chief operating officer (1988-94) was chiefly responsible for the planning document "SUNY 2000: A Vision for the New Century." The plan puts "special emphasis on SUNY as a key player in meeting state needs in health care, public education, economic development, social services, and the environment."

Further Reading: For a comprehensive view of the history of SUNY, consult *Sixty-Four Campuses: The State University of New York to 1985* (Albany, New York: Office of University Affairs and Development, 1985). Nelson A. Rockefeller's important role in the development of the university system is discussed in *The Rockefellers: An American Dynasty* by Peter Collier and David Horowitz (New York: Holt, Rinehart and Winston, 1976).

—Darlene Maciuba-Koppel

STRASBOURG UNIVERSITY

(Strasbourg, France)

Location: Strasbourg, the capital city of the Bas-Rhin Department, 250 miles (400 km) east of Paris, in the Alsace region of France at the Franco-German border, 2 miles (3.2 km) west of the Rhine River.

Description: Three autonomous, nonprofit institutions of higher learning established in 1970 under France's 1968 Orientation Act. These state-financed universities are successors to the University of Strasbourg founded in 1538 and chartered in 1621.

Strasbourg University I, also known as the Université Louis Pasteur, specializes in medicine, science, and economics. Strasbourg II, Université des Sciences Humaines, teaches theology, fine arts, and liberal arts. Strasbourg III is the Université Robert Schuman, which emphasizes the professional schools of law, business, and journalism.

Information: Strasbourg University I
Institute Le Bel
4 rue Blaise Pascal
F 67070 Strasbourg Cedex
France
(88) 41 53 99
Fax (88) 60 75 50

Strasbourg University II
22 rue Descartes
67084 Strasbourg Cedex
France
(88) 41 73 00, (88) 60 03 25

Strasbourg University III
1 place d'Athènes
B.P. 66
67045 Strasbourg Cedex
France
(88) 41 42 40
Fax (88) 61 30 37

In 1537, the city of Strasbourg called on humanist educator Johannes Sturm to revive three existing municipal schools, which were languishing in medieval scholasticism. Sturm came from Paris in 1538 to establish a *gymnasium*, a Protestant Latin school, influenced by the ideas of German educational reformer Philip Melancthon.

Sturm's academic background was impressive. He had

studied with Erasmus of Rotterdam and Thomas à Kempis. He attended the University of Louvain, where he also taught. A respected, learned man, who could at times be pedantic, Sturm directed the restructured *gymnasium* for more than 40 years. Sturm brought in important figures such as John Calvin and Martin Bucer, later adviser to England's King Edward VI. This respected classical secondary school was the forerunner of Strasbourg University. The *gymnasium* also served as a prototype for education throughout Europe.

In 1262, a revolt of the town burghers—aided by Rudolf von Hapsburg—against the bishopric, won the municipality of Strasbourg its own charter from the emperor, making it an autonomous city-state. As an inland port, Strasbourg became an important trade center on a route from Paris to the Rhine River. At the same time it became an intellectual center and experienced its first golden age. In 1210 Gottfried von Strassburg wrote the German poem *Tristan*; the great philosopher Albertus Magnus, equally interested in divine and natural knowledge, studied and preached in the Dominican cloister; and Meister Eckhardt expounded on his belief that there is a divine spark in each soul. By the latter half of the 1400s, Johann Gutenberg had left Strasbourg for his native city of Mainz, but he apparently made his earliest efforts in printing in Strasbourg.

By the time that Sturm arrived in Strasbourg to reform the city's educational institutions, the Reformation had taken hold in the community. According to historian Franklin Ford,

It was the Reformation which changed the whole face of urban life in Strasbourg and thrust the town into a position of European prominence. Lutheranism had won the city with remarkable speed and ease, and the official abolition of the Mass in 1529 merely formalized the existing situation in a now overwhelmingly Protestant community.

Because of its location on the borderland of Catholic power, Strasbourg became a haven for French religious reformers and a place where debates raged between Lutherans, Zwinglians, and Calvinists.

The curriculum at the *gymnasium* consisted of ten classes (grades), each lasting one year under the "eye and hand" of a special master. All ten years were dedicated to the perfection of Latin, and six years to Greek. The classroom language of instruction was Latin, and the native German of the students was only permitted for catechism. Sturm himself wrote many textbooks and books on peda-



Strasbourg University

gogy including: *Book on the Right Method of Founding Schools for Literary Education* (1537) and *Classical Letters* (1565). Latin proficiency at the *gymnasium* was essential; studies were devoted to rhetoric and style. The education was cerebral and intellectual, with little attention to the body or to manners. It was not humanistic in the sense of Erasmus' "freedom" in education. It was an education which stressed piety, knowledge, and eloquence. Music, mathematics, and logic rounded out the

curriculum. The Jesuit Order embraced it as a model to inculcate the minds of the young with the classical and religious training to which it adhered.

An imperial decree in 1566 transformed the upper classes of the *gymnasium* into an academy with two faculties: theology and philosophy. "Strassburg Academy" was given degree-granting powers, but the institution had to wait to become a full university because of the changing political climate. By the mid-sixteenth century, Stras-

bourg's tenuous allegiance to the Germanic Holy Roman Empire was beginning to crumble. During the Thirty Years War (1618–48), Strasbourg tried to remain neutral, yet delicately played the French Bourbon monarchy against the German Hapsburgs. And after Calvin and others had turned the school into a leading center of theological debate, Lutheranism became the orthodox religion of the community by town ordinance in 1598. Strasbourg then became as inhospitable to Calvinists as it already was to Catholics and to Jews.

Strasbourg Academy's Calvinistic professors and friends, threatened by censorship, petitioned for the school's conversion into a university, since a university charter would bring certain rights and immunities for the faculty. In 1621, after some municipal deliberation, the University of Strasbourg received its charter. Few students from predominantly German-Catholic Alsace enrolled, since the University of Strasbourg was traditionally a German-Protestant stronghold. In fact, it was recognized as an international university, attracting students from throughout Protestant Europe. Nonetheless, the municipal officers resisted any claims on their allegiance. To maintain the image of neutrality, in 1639, during the Thirty Years War, they dismissed Professor Joachim Clutenius from the university and took away his citizenship on charges of supplying military information to the German forces at the Rhine.

Although Strasbourg managed to remain neutral during the conflict by abandoning its Protestant allegiances, the city was nevertheless ravaged by the war. Plague and lack of trade due to its isolation devastated the city, while poor attendance at the academy/university (as well as its movement to seven instead of ten grades) lowered the university's prestige, despite the presence of renowned professors Bernegger and Clutenius and satirist Johann Michael Moscherosch, the protégé of several professors. By the terms of the Peace of Westphalia in 1648, the university, along with Strasbourg and the surrounding region, was transferred from the control of the Hapsburgs to the French monarchy. Despite these terms, it took years for the French to organize the particulars of what had been ceded to them.

France's Louis XIV claimed Alsace in 1681 and with it the University of Strasbourg. The document of surrender stated that the university was to remain Protestant and humanistic in nature even after the takeover brought French rule to Strasbourg and reasserted Catholic influence in the region.

Although France's right to Strasbourg was not officially recognized until 1697 by the Peace of Ryswick, the French influence was felt in the city and spilled over to the university. In the eighteenth century, the University of Strasbourg was a "cavalier's university" by reputation, where dueling, riding, dancing, and studying French and French culture—foreign to the German-speaking Alsations and professors—became the fashion. The intelli-

gentsia and nobility who had clung to their German-Lutheran culture were becoming "Frenchified." As the university, which had already acquired a reputation as an international institution, became known as a center for "enlightenment," enrollment swelled. Students from Protestant Germany, Switzerland, the Netherlands, Scandinavia, and Russia—as well as from the "French Interior"—as the Strasbourgeois called the rest of France—made their way there. Talleyrand, Goethe, and Metternich all enrolled with Strasbourg's Faculty of Law.

The glory of the "Frenchified" Strasbourg University was short-lived as reforms in education began taking place in German universities across the Rhine. Other universities offered instruction in German, rather than in Latin, a faculty of philosophy that was elevated to major status, and a curriculum that included natural law. These were modern trends to which Strasbourg University barely gave lip service. Scientific research was gaining importance, and Strasbourg University could not keep up with the well-funded German universities that were amassing great libraries, recruiting the best thinkers, and establishing liberal and universal education. Funding for teachers at Strasbourg was in the hands of a secularized religious foundation called the *Thomasstift*, which limited the number of professorships, paid the professors little, and insisted that they be French natives and Protestant. Local Alsatian teachers, having ties to Strasbourg and Lutheranism, relied on student fees for payment. Reforms promoted by jurist Christophe Guillaume Koch, a law professor at the university, fell on deaf ears. The student population dropped, and regard for the university as an educational force suffered.

The academic life of Strasbourg revived dramatically with the arrival of German scholars and writers such as Wolfgang von Goethe, Johann Gottfried von Herder, and Jakob Lenz. Their work, especially as it related to the *Sturm und Drang* literary movement competing with the French literary hegemony (Molière, Racine, la Bruyère, Fénelon, etc.), was embraced by the Alsatian people and captured the "soul" of their region. Literary circles in Paris sought out these new writers, putting Strasbourg, once again, on the map. Within the politically charged environment of Alsace before the French Revolution, these writers brought life to the dying university. Yet the Alsatian elite, "Frenchified" for more than a century, remained royalists. Rouget de Lisle, a royalist soldier, wrote "La Marseillaise" in 1792 while stationed in Strasbourg, a song taken up by the revolutionaries. It has since become the French national anthem.

After the revolution, Strasbourg University experienced the impact of the newly formed French Republic. By 1790, schools became centralized under the French Ministry of Education. Talleyrand proposed a "new education" based on science in 1792. Study of geometry, calculus, physics, and the applied sciences was entered into the elementary curriculum. All universities were regarded as

politically unreliable and were therefore suppressed. The end came to Strasbourg University with France's National Convention of September 1793. When the university returned in 1808, after Napoléonic reforms, it was as a French institution of higher learning, with a rector presiding over the faculties of "The Academy of Strasbourg." The rector's responsibility was to the ministry in Paris. Strasbourg Academy was responsible for training young bureaucrats by preparing students to pass examinations for governmental positions. It was not a remarkable school, except for its having five faculties. The National Academy in Paris had four, and there were three in most other academies. By 1818 Strasbourg Academy had added a Protestant theological faculty, and it was the center of higher education for two departments, Bas Rhin and Haut Rhin.

In the 1850s a number of Strasbourg Academy students formed two fraternities (Argentina and Wilhelmitana) dedicated to becoming the "sanctuary" of the German language and customs in the midst of an environment "totally steeped in French culture." A young pastor lamented to a professor that teaching German in Strasbourg was a "lost cause," and professor of theology, Johann Wilhelm Baum, warned that "it is all in vain. Another two years of this regime and Alsace will be irretrievably lost to Germany." This did not happen. The University at Strasbourg was given another chance—this time as a German institution. The annexation of Alsace to Prussia, the name of Bismarck's united Germany (1871), was possibly the result of prodding from the intellectual community in Germany who felt that once the Alsatian people were properly reeducated and reintroduced to their latent Germanic nature, they would assimilate easily within the German nation. Whether or not Bismarck was swayed by what he called a "professor's idea," the annexation took place. Building a national front through education was the next step to "giving the Alsations back their true selves," and a strong push to restore the University at Strasbourg to its former glory—as a center for German culture in the Northern Rhineland. By late 1870, native French professors emigrated back into the interior of France and did not return to the classroom. The academy was in shambles as a result of the Franco-Prussian War. Eduard Reuss, a Protestant theologian, wrote to a colleague: "Our university library, as well as our city library is destroyed, and it is irreplaceable. Our lecture halls are sick bays, our students are scattered."

The provisional government of Germany supported the idea of beginning to organize a new university at Strasbourg. Heinrich von Sybel, a Bonn historian, was asked for his advice, which began a debate in the new national assembly, the Reichstag. The Alsations hoped to keep former (French-speaking) professors employed, to retain courses in French, and to have control of the university rather than instituting a German-run school on the ruins of the old academy. Others argued for an institution dedi-

cated to the promotion of the German language and culture. The debate was settled in favor of a bill put forth by Wilhelm Wehrenpfenning to establish a German university at Strasbourg. Meanwhile, in May 1871, the French National Assembly introduced a bill to incorporate the faculties of the defunct Strasbourg Academy into the Academy of Nancy—located in the still-French territory of Lorraine. The University of Nancy was developed to rival the great universities of Germany, yet to foster love of French culture and nationalism in the youth of Alsace. This was the impetus needed to hasten the German organization of their own University of Strasbourg.

Baron Franz von Roggenbach, a Catholic who was commissioned to organize the university, studied all aspects of the effect a new university would have on the region. He was sure that the former academy had failed due to "dilettantism" and "scientific superficiality." He offered chairs to Alsations who had taught at the academy or at the Protestant seminary, but he did not introduce a Catholic theological faculty. New subjects entered the curriculum: economics and political science. The faculty of philosophy was divided: one humanistic, and one for natural sciences and mathematics. Roggenbach wanted more Alsations to attend classes—the priority of this project was to assimilate the region into the German culture—but few had previously attended classes except for those at the Protestant seminary.

Roggenbach asked for 1 million German marks for laboratories, observatories, clinics, seminars, and institutes, and he hoped to establish an endowment for the university. The endowment was turned down by Bismarck and the Reichstag, which stated that funding was not available. The university would not reach the grand scale that Roggenbach had hoped for. He left, but the guidelines for future development were set in place.

Karl Ledderhose, the first curator of the university, dealt with the budget, staffing, and building construction; he also drafted statutes for the university. These statutes abolished student prisons and faculty policing, instituted faculty pensions, and officially divided the philosophy faculty as Roggenbach and the scientists had wanted. The university was granted full responsibility for governing itself in 1875. Prussian architect Hermann Eggert designed a master plan for the construction of new buildings. In 1874 he planned two campuses to appease the medical faculty who wanted their classrooms near the municipal hospital, as they already were, rather than at the proposed new site at Fischer Gate on the northeastern side of Strasbourg. Millions were appropriated to unify the scattered arrangement of buildings which made up the old university.

In April 1877, on the university's fifth anniversary, Strasbourg University officially became Kaiser-Wilhelm-Universität Strassburg. The modern university included new laboratories within the six buildings erected at the medical facility, and six new buildings at Fischer Gate,

built in high Italian Renaissance style. The school gained fame as an *Arbeitsuniversität*, one noted for the seriousness of students and faculty, and for research. The faculties of medicine and law were highly regarded; Emil Fischer, later to win the Nobel Prize, studied chemistry with Professor Adolf Baeyer. The *Strassburger Kreis* (Strasbourg circle), a scholarly gathering of students, met at coffeehouses for evening discussions, and students gathered for discussions at professors' homes.

By 1887 the university professors, through published papers and general attitude, showed their hostility to the Reichstag's policies concerning the Alsatian territory, especially as it affected the university. Ledderhose resigned as curator; three professors left; rumors of university radicalism and Alsatian "francophilism" were widespread. This proved a significant turning point for the university. If professors spoke out against the Reichstag, thus "embarrassing" the government, there would be retaliation. The mission to "re-Germanize the Reichsland" (Alsatian territory) was the university's failure in the eyes of the government, which reassessed the situation by 1887, finding that Kaiser-Wilhelm-Universität Strassburg had, indeed, led the way as a modern university that would serve to glorify German education and would remind the Alsatians of their scholarly Germanic past.

Autonomy for the Alsatian region was in continual question throughout the twentieth century. Writers and artists were promoting the idea of a double culture, strongly tied to both the Gallic (French) and Germanic traditions, yet having a character and strength of its own. After World War I, the region was again in French hands, and on January 15, 1919, Strasbourg University became a French university after dismissing the German professors and reorganizing once again. Notable students were Louis Pasteur and Albert Schweitzer.

At the outbreak of World War II in September 1939, the government of France ordered the nonmobilized residents of Strasbourg to move immediately to locales in interior France. In the case of the University of Strasbourg, the move was to Clermont-Ferrand. Keeping the university open was, according to historian John E. Craig, a "matter of symbolic importance" because "it was now the most conspicuous reminder of *l'Alsace française*." The existence of the institution was an embarrassment both to the German government and to their collaborationist allies in Vichy. The Germans opened a rival university in Strasbourg in 1941 and sent family members of students who had defected to Clermont to beg them to come home. One student said, "We would rather be Frenchmen and defeated than Germans and victorious." The institution became a

center for the *maquis* (the French resistance) in occupied France. German surveillance was heavy and sometimes punitive. Craig describes a 1943 raid:

In November 1943 the Gestapo assaulted the university . . . before they were through the Germans had killed one professor . . . seriously wounded another, arrested about 350 members of the university community, and deported more than 100, including 8 professors, to concentration camps.

In June 1945, Charles de Gaulle, who symbolized the resistance, attended the last professors' convocation at Clermont. After 1945, the university was reestablished in Strasbourg. The manifesto of the university was to serve as a citadel of Franco-German culture (*La Nouvelle ligue franco-allemande* was established to help Alsatians heal). This development fostered unity in Alsace-Lorraine, as the European Council, founded in Strasbourg in 1949, worked toward European unity. Robert Schuman of the French ministry, for whom Strasbourg University III was named, was influential in the discussions of the postwar future of the university.

In 1991, Strasbourg University I, II, and III joined the city of Strasbourg, the Bas-Rhin department, and the Alsace regional office, to form Le Pôle Universitaire Européen, a cooperative dedicated to campus urbanization and to the general education of local "Strasbourg-geois" students needing state job certificate training and improved linguistic skills.

Further Reading: John E. Craig's study of Strasbourg University, *Scholarship and Nation Building: The Universities of Strasbourg and Alsatian Society, 1870-1939* (Chicago: University of Chicago Press, 1984) presents a unique and scholarly view of the interaction between higher education and society, of nationalism and alienation as it relates to Strasbourg University in particular, and to the history of Europe in general. Franklin Ford's *Strasbourg in Transition* (New York: Norton Library, W.W. Norton, 1966) gives many details of the university's founding and its subsequent fate within the educational reforms of France and Germany between 1648 and 1789. *The Education of Nations* by Robert Ulich (Cambridge, Massachusetts: Harvard University Press, 1961) is a "comparison in historical perspectives" which recognizes the importance of Strasbourg University's history within the academic histories of France and Germany.

—Carol Shilakowsky

TATA INSTITUTE OF FUNDAMENTAL RESEARCH (Mumbai, Maharashtra, India)

Location:	The Tata Institute of Fundamental Research lies on the southernmost tip of Mumbai's (Bombay's) Colaba area. It is an enclave in the Navy Nagar district, one of the city's most exclusive districts.
Description:	The institute offers no degrees. It is a community of advanced researchers and scientists working in the two broad groupings of physics and mathematics. There is also a dental research unit which has an ongoing project on the study and prevention of oral cancer. The institute's scientists have pathbreaking studies to their credit in mathematics, physics, astronomy, and computer science.
Information:	Tata Institute of Fundamental Research Homi Bhabha Road Mumbai 400 005 India
Visiting:	Write to the above address for further information.

Few centers of scientific research are as picturesquely located as the Tata Institute of Fundamental Research in Mumbai (Bombay). The Arabian Sea, crashing gray waves, and boundless horizons frame two sides of the TIFR campus. It is a small piece of land, but standing on the edge of the ocean, there is a sense of grandeur, space, and peace about the institution. Just outside the gates is the teeming metropolis of Mumbai; within the TIFR buildings, the pace is equally intense, but directed toward long-term research. The Tata Institute of Fundamental Research still commands respect in Indian scientific circles, although there are other centers these days for quality research, such as the various Indian Institutes of Technology. Its strength is its sharp focus on fundamental research. Engineering colleges and institutes cater to the demand for short-term technological research.

The history of TIFR is closely connected with that of science and scientific institutions in independent India. Its past is linked further to its founder, Homi Bhabha (1906–66), a physicist of great repute and extraordinary energy. Bhabha was born into an upper class Parsi family in Mumbai and educated at established centers, Mumbai's Cathedral School and Elphinstone College. He then went to Gonville and Caius College at Cambridge University

where he studied mechanical sciences. Soon after his success in the tripos, Bhabha went on to study theoretical physics at the Cavendish Laboratory. It was here that his active scientific career began. He worked with well-known scientists of the time such as John Cockcroft and those in Niels Bohr's group at the Institute of Copenhagen. From 1933 to 1939, Bhabha lived in Europe, working on cosmic ray physics. The outbreak of World War II stranded him in India, where he was vacationing. He worked for a while in Bangalore at the Indian Institute of Science where his colleagues were other distinguished scientists such as Nobel Laureate, C.V. Raman and Vikram Sarabhai (who would succeed Bhabha as the head of the Department of Atomic Energy). During this period, he began active efforts to set up an institute of physics in India. In 1945, his perseverance paid off when the Tata family (one of India's richest industrial houses) agreed to finance a fundamental physics research institute of Bhabha's choice and design. The Tata's industrial empire began with investment in steel; Bhabha's aunt had married into this house. J.R.D. Tata (who played an active role in India's bid to become industrially self-reliant) encouraged Bhabha to create a scientific institution and the Sir Dorab Tata Trust followed this up with funds for the project.

Connected by birth to one of India's most powerful industrial families, Homi Bhabha was at ease with prominent politicians and national leaders. He was also a gifted administrator and TIFR was the product of his single-minded sense of mission about Indian science. Science under the colonial education system had either stagnated in university departments or experienced isolated bursts of glory under individual scientists. Bhabha's was an effort to build a community of scientists who would work in a collegial atmosphere, supporting each other intellectually and professionally. In this respect, his endeavor paid off. His recruitment efforts across India gained TIFR a team of talented scientists who lived up to Bhabha's expectations. The youthfulness of the TIFR recruits was an image of Bhabha's own youthfulness and energy (he was only 36 when he founded TIFR).

Bhabha's scientific talent, background, and connections came together particularly well in the period after India's independence from British rule in 1947. The Tata Institute of Fundamental Research benefited from the pro-science approach of the first generation of leaders in independent India. After independence, the problems facing India were vast. Poverty and the unequal distribution of resources weighed down the agenda of most administrators. The first prime minister, Jawaharlal Nehru, was especially convinced of the transformatory powers of sci-



Tata Institute of Fundamental Research

ence and technology. According to him, "The future belongs to science and to those who make friends with science." Homi Bhabha's efforts to build up a community of physicists at TIFR thus met with a sympathetic attitude in the very highest of government circles. Government funds completed, then exceeded the private contributions to the institute. Bhabha's personality ensured however that TIFR's academic culture maintained its autonomy and that the institution did not become a dull, marginal player in the competitive academic world. The Tata Institute of Fundamental Research was not to go the way of university science departments, and for a long time it did not have any university affiliations. However, once Bhabha became a senator of the University of Mumbai, TIFR did move toward integration and coexistence with the traditional system of science research in India, through university curriculum. Even today, TIFR offers no degrees; it is an institute for advanced research. Still, there is the provision for advanced physics graduate students to do their research here.

In 1955, funding for TIFR became an established part of government policy under the terms of the agreement (drawn up at Bhabha's insistence) between the state and

federal governments and the Sir Dorab Tata Trust. The institute retained the Tata name but to this was added another title: National Centre of the Government of India for Nuclear Science and Mathematics. Its academic output grew rapidly in the 1950s. The construction of a digital computer was completed in 1959 and cosmic ray experiments and research were especially fruitful from 1947 to 1957. Theoretical physics and mathematics picked up momentum in the late 1950s. While Bhabha was often too busy with his multiple responsibilities to follow day-to-day developments at TIFR, he retained a lasting interest in the welfare of the institution. He attended TIFR Wednesday colloquia regularly and, from his position of power at the Department of Atomic Energy, ensured that TIFR did not become bogged down in bureaucracy.

Originally located on Peddar Road in Mumbai, TIFR moved in 1949 to Apollo Bunder, into the grounds of the Royal Yacht Club. Finally, in 1962 it shifted into its current residence in South Mumbai in the Navy Nagar area. Prime Minister Nehru himself, in recognition of the importance of the institution, inaugurated the new TIFR buildings. Homi Bhabha applied himself to the design

and planning of the new location, with an eye to the minutest detail. At the new site, Bhabha was actively involved in planning the interior of the building, planting trees, and seeing to the layout of the Institute's gardens. He was open to the new architectural ideas that TIFR architect, Helmut Barsch of Chicago, presented to him. Barsch was given a free hand to design TIFR. Housing was extremely tight, but opposite the TIFR grounds, a residential complex for scientists has now come up. A lover of art, and a painter himself, Bhabha ensured that TIFR would not become a gloomy, dark shrine to science. The building is full of paintings in unexpected places. Some of his own collection hangs on the walls and in the small museum of the institute. M.F. Husain, one of India's leading artists, painted a mural on the wall of the central hall. Aesthetically, TIFR is a pleasing place, although many criticized Bhabha's and TIFR's attention to appearance in a country where there are few resources for day-to-day living.

Through Bhabha, TIFR is also connected to India's drive to generate atomic energy. This has been controversial in recent times, with accusations in world forum that this research is for military purposes. In the early days after independence, though, India's political and scientific concerns dwelt on the production of energy. Freedom from dependency on imported oil was a key political issue and science seemed to offer a way to achieve this national goal. Bhabha provided the leadership to this enterprise when he became chairman of the Atomic Energy Commission in 1948. In 1954, the AEC became the Department of Atomic Energy, again with Bhabha at its head. Under his leadership, research into atomic energy became a priority. In 1964, Bhabha said at the conference that for the developing world, "No power is as expensive as no power." Indigenization of technology was an imperative, especially in the 1960s when public finances became tight and imports of western technology became very expensive. The absolute independence from foreign control that Bhabha desired was not to be, at least not in his lifetime, and there were collaborations with France, Canada, and the United States in India's nuclear project. Still, there were advances as when the Atomic Energy Establishment (later renamed the Bhabha Atomic Research Centre or BARC), set up by Bhabha in Trombay, built India's first nuclear reactor, APSARA. It went critical in 1956. Tata Institute of Fundamental Research scientists built the control system for APSARA and many of its scientists such as R. Ramanna went on to become part of the DAE's leading scientific elite. The Tata Institute, along with BARC, became an active part of the Department of Atomic Energy's attempts to advance the research into nuclear physics in India. A major part of TIFR funding

still comes from the DAE. The culture of independence and autonomy that Bhabha championed at TIFR also took root in the DAE. As Bhabha stressed, government funding did not necessarily mean a bureaucratic culture or excessive centralization, although with his death in 1966, some of the dynamism that had symbolized TIFR and the DAE faded. Bhabha had hoped to create independent scientific communities whose professional solidarity and vibrancy would see them through periods of weak or non-existent leadership. To a large extent, though, the success of TIFR and the DAE was dependent on his powerful personality and his personal and social links with the political and social elites and policy makers of independent India. With his unexpected death at the age of 57, in a plane crash at Mont Blanc, India lost an energetic champion of long-term scientific research whose skill at organizing indigenous scientific talent was unique.

TIFR continues to play a leading role in India's fundamental science programs. It has 400 scientists and its projects include the construction of the world's largest meterwave radio telescope and a high-energy cosmic-ray laboratory. A large library caters to the needs of its researchers. However, lack of funding restricts the easy movement of scientists to international forum. Sabbatical leave abroad is infrequent. Unlike Bhabha, the TIFR scientists of today do not have a completely free hand with state resources. Still, if Bhabha had been alive today, he would not have been ashamed of the institution he created. Given the current crisis in Indian higher education and despite inadequate resources, TIFR still lives up to its founder's aims. In 1995, the ceremonies and symposia that marked the 50th anniversary of the Tata Institute of Fundamental Research celebrated India's Renaissance man of science and the farsightedness of his vision.

Further Reading: *Homi Bhabha: Father of Nuclear Science in India* by R.P. Kulkarni and V. Sharma (Bombay: Popular Prakashan, 1969) is a straightforward narrative of Homi Bhabha's work both at the Tata Institute and at the Department of Atomic Energy. There is a comparative history of TIFR and Calcutta's Saha Institute of Nuclear Physics in *Building Scientific Institutions in India: Saha and Bhabha* by Robert S. Anderson (Montreal: Centre for Developing-Area Studies, 1975). An overview of India's science projects is in *Science in India: Institution-Building and the Organizational System for Research and Development* by Ward Morehouse (Bombay: Popular Prakashan, 1971). Another general work on Indian science is *Science and Indian Culture* by J.B.S. Haldane (Calcutta: New Age, 1965).

—Sharmishtha Roy Chowdhury

TECHNION—ISRAEL INSTITUTE OF TECHNOLOGY (Haifa, Israel)

- Location:** On the western slope of Mount Carmel in Haifa, Israel. Technion City comprises 280 buildings on 300 acres overlooking the Mediterranean Sea.
- Description:** Large research university with 11,000 students. With more than 45,000 graduates by the late 1990s, Technion was a major contributor to the technological development of Israel.
- Information:** Technion—Israel Institute of Technology
Division of Public Affairs and Resource Development
Technion City, Haifa 32000
Israel
(04) 822-1513
(04) 829-2578
- Visiting:** Contact the university at the above addresses and phone numbers or through any of the Technion Societies. Societies are in place in Argentina, Australia, Austria, Brazil, Canada, Denmark, France, Germany, Great Britain, Japan, Mexico, South Africa, Switzerland, the United States, and Venezuela. The Coler California Visitors Center at Technion is open Sunday through Thursday from 8:00 A.M. to 3:00 P.M. Visits include an introduction by a Technion student with orientation at a physical model of the campus and an audiovisual presentation.

Technion was founded in 1924 and is the oldest university in Israel. By the 1990s, almost three-quarters of the managers of technological companies in Israel were graduates of the university. Technion comprises more than 250 buildings built on 300 acres, and boasts a student body of 11,000, with 700 faculty members. The faculty/student ratio in the mid-1990s was 15.8 to 1. There are 19 departments and 40 research centers and institutes. Technion's stated goals are education, leadership in technology and academia, contribution to human knowledge, and service to the economy and the general public of Israel.

When the fifth Zionist Council met in 1901, one of the issues on the agenda was the establishment of a Jewish university. Eleven years later, the cornerstone was laid for Technion's first building, and in 1924, the first class consisted of 16 students studying architecture and civil engineering. During these intervening years building was

interrupted by a number of factors. Construction that had begun in 1912 stopped during World War I, and in 1916 the German army took over some of the partially finished buildings. Some of the early founders of the university argued over whether this should be a technical school or an institution of higher learning. Zionists in Germany who worked toward Technion's establishment discussed the language of instruction, and Hebrew won out over German. In 1925 a financial crisis prompted some affiliated with Technion to suggest a merger with Hebrew University in Jerusalem, but it was rejected. Technion's first graduating class took its examinations in Hebrew in 1928, and then engineers and architects were awarded their degrees in 1929.

In 1939 a Technion physics professor was sent to the United States where he organized the American Society for Technion (ATS), which continues to earn money for the university. At the New York World's Fair in 1939, a model of the main Technion building was part of a Technion exhibit. One of the university's founders was Albert Einstein. At a founding ceremony of the American Society for Technion, which pledged to raise funds for the institute, Einstein said, "I have seen with great satisfaction how the Technion fulfills the important task of developing the intelligence and expert knowledge of young people in the field of technology." David Ben-Gurion, the first prime minister of the state of Israel, saw Technion as an important leader in the building of the new state. In 1948, during the war for Israel's independence, the academic schedule was reduced, and the number of full-time students fell to 670. Wars continued to affect students over the years at Technion. In 1973 there was a five-month delay of classes after the Yom Kippur War. The president of Technion at the time was Amos Horev, who was the school's first Israeli-born president.

In 1909 German architect Alexander Baerwald designed a building to anchor Technion. Its style was European classical with eastern accents like a dome, since Palestine's Ottoman Empire left its mark on the country. Facilities on the 300-acre campus include an amphitheater and theater, audiovisual libraries, laboratories, music center, computer centers, a sports center and swimming pool, and student dormitories. In the dormitories for single students there were close to 3,000 beds. Also on the campus were a bank, shops, a day-care center, a synagogue, and a theological study hall.

In the late 1950s and early 1960s Technion shifted from a European-style school of engineering to a scientific research university based more on an American model. In 1953 the institute had outgrown its midtown



Israel Institute of Technology

Haifa location, and ■ site on Mount Carmel was selected by Prime Minister Ben-Gurion.

In the 1950s and 1960s women made up less than ten percent of the undergraduates receiving degrees at Technion. By 1995 that ratio had changed, and more than 25 percent of Technion's undergraduate degrees were granted to women. By the end of the century the student body population was increasing, and the university aimed to have close to 15,000 students.

The first academic unit established at Technion was the faculty of architecture and town planning. Together with the faculty of civil engineering, these departments trained students who went on to build the fledgling state of Israel. In 1949 Dr. Sydney Goldstein, chairman of the Aeronautical Research Council of Great Britain, joined the Technion faculty and formed the department of aeronautical engineering.

Technion offered 41 undergraduate degree programs. Most of the four-year undergraduate programs led to a bachelor of science in the sciences and engineering. In 1978 Technion added ■ three-year program toward a bachelor of arts in science, recognizing that other universities in Israel offered similar programs that were drawing potential Technion students away. The degree program in architecture was five years and that in medicine was six years with an intermediate B.A. or B.S. awarded. The 20 faculties/departments were: aerospace engineering, agricultural engineering, architecture, biology, chemical engineering, chemistry, civil engineering, computer science, education in technology and science, electrical engineering, environmental engineering, environmental science, food engineering and biotechnology, general option, industrial engineering and management, materials engineering, mathematics, mechanical engineering, medicine, and physics. Among undergraduates, the most popular concentrations are civil engineering, computer science, electrical engineering, and industrial engineering and management.

There were 61 graduate degree programs. Degrees offered include masters of science, engineering, business administration, and doctor of science. Of 2,800 graduate students, about 400 come from outside Israel. The percentage of graduate students in the general student population was between 25 and 30 percent in the early 1990s. During the large influx of immigrants from the former Soviet Union and Eastern Europe, Technion played a central role in absorbing the newcomers. Many were highly skilled, including 55,000 engineers who arrived among 500,000 Russian immigrants between 1989 and 1993. Technion offered job-development programs as well as retraining and educational programs.

Technion was the largest applied research center in Israel, and it was one of the world's only technological institutions that had a faculty of medicine. Technion opened its medical school in 1969. In 1973, the existing medical school merged into Technion as ■ faculty. In

1979 the 17-floor Rappaport Building was inaugurated to house laboratories, lecture halls, and library. There were 500 medical students, 200 graduate students, and more than 230 professors and researchers.

The faculty of aerospace engineering was the only one in Israel, and it brought the country to a position of leadership in aviation and aerospace. Its students built a communications satellite, as well as fighter aircraft and commercial aircraft. The supersonic wind tunnel at the university enabled the department to develop the Lavi jet fighter and the Kfir C-22 fighter.

Agricultural departments were essential in a region where self-sufficiency seemed impossible at first. Irrigation methods, harvesting equipment, pest-control techniques, and crop-protection systems pioneered at Technion were exported to farmers in Morocco, China, Russia, Spain, and elsewhere. Drip irrigation saved millions of dollars in the desert regions of southern Israel, and it was developed at Technion.

The computer science department expanded rapidly in the 1980s and trained many of the computer experts who went on to found and lead Israeli software companies. The Technion Energy Center created a giant solar energy collector and pushed the boundaries of solar power. With the help of Technion research, the parliament building in Jerusalem, the Knesset, was converted to solar energy. A hotel in ■ southern resort area saw a drop in its annual use of fuel oil from 48 tons to 3 after it switched to solar power. Technion scientists also investigated alternative energy sources, including solar ponds and methane gas, a by-product of farm animal waste.

Technion's budget in the late 1990s was nearing \$200 million, more than half of which came from the Israeli government. Tuition and Technion societies provided some of the rest. Supporters of the university saw the funds as an investment in Israel's future. High-technology exports from Israel were valued at almost \$5 billion at the close of the century.

Technion offers an international program for high-school students known as Sci-Tech. The six-week program allows students from around the world to work with Technion faculty and facilities on a variety of projects. Some work with robots, others study computer languages, and all are made to feel comfortable in a research environment. Technion also houses a Youth Center whose aim is to stimulate interest in mathematics and science among high-school students. Faculty members coach an Israeli team that participates in the International Mathematics Olympics and organized inter-city mathematics competitions. Many are also involved in training high-school graduates and army veterans so that they can pass Technion's rigorous acceptance regimen.

A program for exceptionally gifted students allows the university to work with students of promise in fashioning degree programs that have flexibility. Some undergraduates can undertake graduate-level research before com-

pleting undergraduate degrees, and others work toward B.S. and M.S. degrees simultaneously. The Technion Research and Development Foundation (TRDF) has registered hundreds of patents. A satellite designed and built by students, Gurwin-1 Technsat, was launched in the late 1990s.

Centers of Excellence were established at Technion in 1991 in many fields to allow inter-departmental cooperation and technological research. Some of these were: opto-electronics, which combined research in physics, electronics, and optics to focus on communications; space research; high-temperature superconductivity; environmental science and water resources; and complex fluids, microstructures, and macromolecules.

In 1992 the Technion Institute of Management was formed, and five years later the faculty of industrial engineering and management dedicated the new business school. One of its new courses of study was a master's program in information management engineering.

Technion has become Israeli industry's research and development department. Research in many fields pro-

vides tools for corporations across the world. The high technology industries in Israel acquired their reputation in large measure from the work done by Technion students and graduates.

Alumni of Technion include the architect of Israel's Supreme Court; the general managers of Intel in Israel, Microsoft in Israel, Teva Pharmaceutical Industries, and Osem Food Industries Ltd.; presidents of Israel companies including Elron, Elbit, Israel Aircraft Industries, and Elscint; and government officials from the finance ministry and the defense ministry, among others.

Further Reading: A broad-based history of the university is *Technion: The Story of Israel's Institute of Technology* by Carl Alpert (New York: American Technion Society, 1982) provides a concise look at the university through the eyes of one of its most successful fundraisers.

—Fran Shonfeld Sherman

TUFTS UNIVERSITY

(Medford, Massachusetts, U.S.A.)

- Location:** Tufts has three campuses. The main one is a residential campus in Medford, a suburb five miles west of Boston. This campus comprises the College of Liberal Arts, Jackson College, the College of Engineering, the Graduate School of Arts and Sciences, the School of Nutrition Science and Policy, and the Fletcher School of Law and Diplomacy. The schools of medicine and dental medicine are on a campus in downtown Boston, near the Massachusetts Turnpike along with the Sackler School of Graduate Biomedical Sciences. The school of veterinary medicine is located in North Grafton, Massachusetts.
- Description:** Tufts is an independent, private, coeducational university. It has more than 8,000 students on its three campuses. Of these, approximately 4,500 are undergraduates.
- Information:** Tufts University
Medford, MA 02155
U.S.A.
(617) 628-5000
Fax (617) 627-3860
- Visiting:** For visiting information, contact the Office of Admissions at the above address.

The Universalist Church issued a charter to the Trustees of Tufts College in 1852. It was the 163rd institution of higher learning chartered in the United States, and it was built on land donated by Charles Tufts. More than a century later, Tufts is renowned as a center for teaching, as well as for research. In 1854 Tufts College had seven students and four professors and was led by president Reverend Hosea Ballou II. The college opened an affiliated medical school in 1893 on Boylston Street in Boston. The medical school was coeducational, and offered a three-year program. Four years later it moved to the remodeled Baptist Church on Shawmut Avenue. In 1899 the Boston Dental College joined with Tufts to form Tufts College Dental School. Realizing that the two schools had similar goals, they built a new building on Huntington Avenue in Boston for both the medical and dental schools in 1900.

In 1902, the faculty of arts and sciences was created. By 1906 women made up 70 percent of the entering class of College of Letters. In 1910 a change in the school's charter created a separate Jackson College for Women,

and students had the choice of a degree from Jackson or Tufts. The Fletcher School of Law and Diplomacy was founded in 1931 and was to be administered jointly by Tufts college and Harvard University. By 1945 every state in the United States was represented at Tufts, even though only five years earlier 80 percent of the students came from within 50 miles of Medford.

In 1952 the 100th anniversary of the Tufts charter was celebrated during the commencement week and again at a three-day centennial celebration in October. Among the dignitaries who joined in the celebration were the president of the Carnegie Institution, a Tufts alumnus; the presidents of Harvard and the University of Glasgow; and the Swedish ambassador to the United States. Leonard Carmichael, who had been president of the university since 1938, resigned at the end of 1952 to become secretary of the Smithsonian Institution. His tenure was marked by the expansion of scientific research at Tufts, combined with a continued focus on the education of undergraduates. The number of undergraduate students at Tufts during Carmichael's presidency rose from 615 in 1937 to 1,175 in 1950. His successor was Nils Yngve Wessel, who served as Tufts' president until 1966. Wessel was only 39 years old when he became the president. His goal was to maintain Tufts as, in his words, "a small university of high quality."

In 1955 Tufts officially became a university. Students and faculty applauded the change from Tufts College to Tufts University, saying that the name had finally caught up with the reality of the school. Undergraduate divisions were renamed colleges and graduate divisions were renamed schools in the updated charter. There were major expansions in the graduate schools in the early 1960s. The number of master's programs went from 21 to 31 and the number of doctoral programs went from 8 to 20. The Tufts-New England Medical Center became an unincorporated alliance in 1961, and by 1968 it was a Massachusetts nonprofit corporation. New degree programs were added in the 1970s, including a B.S. in engineering and engineering science that allowed more liberal arts courses for engineers. The Nutrition Institute was inaugurated in 1976, and the next year was the beginning of cross-registration and a five-year music degree with the New England Conservatory of Music. The School of Veterinary Medicine was authorized in 1978, and the Sackler School of Graduate Biomedical Sciences opened in 1980. The School of Nutrition absorbed the Nutrition Institute and the graduate department in nutrition. The Cabot Intercultural Center was inaugurated at the Medford campus in 1981, and the Large Animal Hospital opened at the Grafton campus in 1982, followed by the Hospital for



Tufts University

Small Animals at Grafton, which opened in 1985.

In 1990 the Tufts endowment reached a new high: \$155,600,000. In 1995 Tufts was included among the country's top 25 schools in *U.S. News and World Report*. As a private institution struggling with increased costs, Tufts was an expensive place to study. Tuition and fees in the late 1990s were above \$20,000 annually, with room and board costing an additional \$6,500. About 39 percent of Tufts students received some form of financial aid.

On-campus housing is guaranteed for freshmen at the Medford/Somerville campus. This campus holds the College of Liberal Arts and Jackson College, the Fletcher School of Law and Diplomacy, the College of Engineering, the School of Nutrition Science and Policy, and the Graduate School of Arts and Sciences. Some of the dormitories are coeducational. Fraternities and sororities also provide housing for some of their members, but fewer than 15 percent of students join fraternities, and fewer than 5 percent join sororities. About 80 percent of the students live in university housing. Commuters make up only 8 percent of the student body. There are some special-interest houses available on campus that feature foreign languages or specific cultures.

When the university is not in session, Tufts opens its doors to outsiders for conferences. The residence halls are available as are lecture halls seating from 10 to 600 participants. Meals are offered in the dining halls, and special theme meals are available for catering. From May through August, Tufts also has summer programs for high school students and English as a foreign language programs.

On the Boston campus are the New England Medical Center, the Jean Mayer USDA Human Nutrition Research Center on Aging, the Tufts University School of Dental Medicine and Tufts University School of Medicine, the Health Sciences Library and Arthur M. Sackler Center for Health Communications, and the Rehabilitation Institute. The campus in Grafton holds the school of Veterinary Medicine and two animal hospitals. Tufts also has a fourth campus, located in Talloires, France, that has the university's European Center.

In the late 1990s Tufts had a full-time and part-time faculty of 617 in the arts and sciences. Of these, close to 300 were full-time faculty members in the school of arts and sciences while others taught in the engineering field. There were close to 400 other members of the faculty teaching either full-time or part-time in the medical, dental, veterinary, nutrition, law and diplomacy, and graduate science schools. The student/faculty ratio was 13:1. About 99 percent of the faculty hold doctorate degrees or its equivalent.

Tufts granted more than 1,000 bachelor's degrees annually in the late 1990s. Some of these students took advantage of specialized academic programs. These programs include double majors, independent study, internships, semester at sea, study abroad, and combined programs with the New England Conservatory of Music, the School of the Museum of Fine Arts, and the European

Center in Talloires, France. The university offers remedial services such as tutoring as well as ROTC training for the Air Force, Army, and Navy. Graduate degrees are offered in 89 major fields of study.

Undergraduate majors include American studies, anthropology, archaeology, architectural engineering, art history, Asian studies, astronomy, biology, biotechnology, engineering, chemical engineering, chemistry, child development, classics, communications, computer science, dance, drama, economics, education, electrical engineering, English, environmental studies, French, geology, history, international relations, mathematics, mechanical engineering, music, philosophy, physics, political science, psychology, religion, sociology, Spanish, and women's studies.

The five university libraries have 863,000 books as well as microforms, periodicals, journals, university archives, a media center, and government documents. There is a music library, and each department has specialized collections of materials. There are more than 250 microcomputers located in the libraries, classrooms, and computer centers. The campus has a computer network as well as special facilities including a computer-aided design laboratory. The academic computer services department runs three computer labs: the Eaton Computer Lab and the Mark Learning Resource Center both have PCs and the Jackson lab has Macintosh computers.

Tufts is a member of the National Collegiate Athletic Association, Division III. Its intercollegiate sports include baseball, basketball, crew, cross-country, field hockey, football, golf, ice hockey, lacrosse, sailing, soccer, softball, squash, swimming and diving, tennis, track and field, and volleyball. Club sports include rugby, fencing, sailing, water polo, ultimate frisbee, martial arts, and equestrian. There are more than 130 organizations on campus, including the student newspaper and radio station. Other popular clubs and groups include student government, film, choral groups, jazz band, concert band, marching band, opera, symphony orchestra, pep band, dance, and drama. Religious and cultural organizations include International Club, Hispanic-American Society, Afro-American Society, and the Asian Students Club. The students represent all 50 states as well as 63 foreign countries.

Tufts is among only 38 private universities with a Research I rating from the Carnegie Commission. The university focuses on teaching as well as research, and states on its home page on the internet that the university is dedicated to solving the most critical problems facing the international community.

Further Reading: The most complete history of the university is *Light on the Hill: A History of Tufts University 1852-1952*, by university archivist Russell E. Miller (Boston: Beacon Press, 1996). Tufts has an accessible and attractive web site at <http://www.tufts.edu>.

—Fran Shonfeld Sherman

TULANE UNIVERSITY

(New Orleans, Louisiana, U.S.A.)

Location:	Approximately four miles from the central business district and the French Quarter of New Orleans.
Description:	An independent university enrolling approximately 11,400 students in undergraduate, graduate, and professional schools.
Information:	Office of Undergraduate Admission 210 Gibson Hall Tulane University New Orleans, LA 70118-5680 U.S.A. (504) 862-8715
Visiting:	To avoid conflicts with the university schedule, please call the Admission Office at (800) 873-9283 to schedule a campus visit.

The idea of Tulane University may have originated in Louisville, Kentucky, some 60 years before the institution was founded. Between 1818 and 1821, young Paul Tulane and his cousin traveled throughout the southern United States. Hearing that the first steamboat to ascend the Mississippi was to stop in Louisville, Tulane rode to meet it and was impressed by the Creole planters on board who were bringing their sons to attend college in Lexington or Bardstown. Years later he remarked: "It seemed a strange thing to me, and I remembered it; and I had not lived long in Louisiana before I thought I would like to see a good college built where the boys might be educated at home."

Tulane University began in 1834 when seven young physicians desired to open a medical college to provide better training to combat New Orleans' frequent epidemics of cholera and yellow fever. An advertisement for the school criticized the city's physicians, accusing them of acting selfishly and neglecting to educate others for the medical profession. Initially, the medical college had no buildings, property, or equipment; classes were held in private offices, and instruction was conducted in nearby Charity Hospital. However, 11 students enrolled in 1835, the year of its charter, and all graduated in 1836.

The school proved successful and soon had its own building in the city's business district. Impressed by the school's achievements, local civic leaders pushed for the establishment of a state university in New Orleans and

presented a plan to do so at a meeting of the state constitutional convention in 1844.

When the state constitution was adopted in 1845, it stipulated that a university be established in New Orleans with four faculties: law, medicine, natural sciences, and letters. The university was to be named the University of Louisiana, and the Medical College of Louisiana was to constitute the medical faculty. Furthermore, the legislature would provide for the university's organization and maintenance but would not be under obligation to provide appropriations for its support. The University of Louisiana, absorbing the medical college, was incorporated by a legislative act on February 16, 1847. Shortly thereafter, a law department was added, and the collegiate department was established in 1851.

The constitutional decision not to mandate funding for the new university was a political one arising from tensions between the rural and urban lawmakers. "Country" legislators deemed the Louisiana State Seminary of Learning and Military Academy (the parent institution of Louisiana State University) in Rapides Parish near Alexandria to be the official state university. Nevertheless, between 1847 and 1861, the University of Louisiana received \$117,000 in appropriations, most of the funds going to the medical school. An appeal to the citizens of New Orleans for money in 1850 brought the university's cash assets to \$1,602.

Talk of secession was rampant during the late 1850s. The University of Louisiana advertised and drew many southern-born men away from northern colleges. During the Civil War, the university closed: many faculty members and most of the students were serving in the Confederate Army. The law school reopened in 1865, and the medical school soon thereafter. Although student enrollment had reached 400 in 1860, after the war it took 16 years for the enrollment to reach 217 students. Although the state constitutions of 1864, 1868, and 1879 provided for state support of the University of Louisiana, the economic devastation brought by the war made it impossible to actually collect the funds until 1883.

In 1877, David F. Boyd, president of Louisiana State University, strongly supported a plan to move the University of Louisiana to Baton Rouge and consolidate the two universities. The University of Louisiana's board acquiesced, but a popular vote was required in order to amend the state constitution. The people of New Orleans, however, did not embrace the idea of their sons attending school in Baton Rouge and soundly defeated the proposal.

In the nineteenth century, growth in business enterprise paralleled the growth in higher education. Private



Tulane University

benefaction now filled higher education's need for financial support once provided by the church or state. Beset by financial uncertainties and political pressures, the University of Louisiana was assisted, perhaps rescued, by the financial generosity of Paul Tulane. Tulane was descended from a line of French magistrates and lawyers. His father, Louis, prospered in the lumber exporting business in Santo Domingo but fled during a slave uprising in 1791 and settled near Princeton, New Jersey, in Cherry Valley. Paul Tulane was born there on May 1, 1801, received an elementary and private school education, and, at 15, went to clerk for Thomas White, a Princeton merchant. New Orleans, however, was to provide him the opportunity to amass a vast fortune.

On the aforementioned trip with his cousin, Tulane had observed the transportation of goods on the Mississippi River and assessed the potential of New Orleans as a major center of trade. Paul's older brother, Louis, was a successful fur merchant in New Orleans and, in 1822, Paul

moved there. With financial assistance and encouragement from his father, he established himself as a dry goods merchant and traded up and down the Mississippi Valley.

By 1828, Tulane was worth \$150,000, but his fortune was securely made when he joined a New Orleans tailor, Isaac Baldwin, in the mass production and marketing of men's clothing. Concerned that the coming war would bring unstable financial conditions to the South, Tulane transferred most of his liquid assets to the North. Tulane retired to Princeton in 1873, and, some years later, made the decision to financially support the cause of higher education in New Orleans where he had first become successful. He summoned U.S. Representative Randall Lee Gibson of Louisiana to meet with him and to accept the endowment of his New Orleans property, the income from which was to be used to support higher education. Gibson devised a plan by which a self-perpetuating board of 17 administrators selected from the best and brightest male citizens of New Orleans would oversee the bequest.

Two questions faced the board immediately. Should ■ new institution be established or should the University of Louisiana be strengthened? Should the institution be devoted to vocation and technical education or concentrate on the liberal arts?

Tulane had written to the board that he meant "to foster such ■ course of intellectual development as shall be useful and of solid worth, and not [be] merely ornamental or superficial." After much discussion, the board agreed to fortify the University of Louisiana and establish a vocational-technical school within the university, subject to Tulane's approval. The vote was close; two votes had determined that the new university would not be a technical school.

Tulane, however, did not approve; he objected to fostering the academic department of the University of Louisiana and wanted a new technological institute to be built. Eventually, because affiliation with the University of Louisiana was the only way to avoid paying taxes on the gifts to the institution, Tulane acquiesced to the takeover of the University of Louisiana, academic department and all.

In 1884, the legislature passed Act 43, which conveyed all property and control of the University of Louisiana, whose administrators had been supportive of the consolidation, to the Tulane Education Fund administrators. The people of Louisiana later ratified the act in a constitutional amendment adopted in 1889. Richard Henry Jesse, dean of the academic department at Louisiana State and later a senior professor of Latin at Tulane, spearheaded the merger. The resulting institution was renamed Tulane University of Louisiana. Tulane had objected at first to the naming of the university after himself. He suggested that Deosto, LaSalle, or Bienville might be good names, but he was prevailed upon to change his mind by Congressman Gibson who noted that these men had nothing to do with education.

Paul Tulane died on February 10, 1886, unmarried and childless, and the administrators fully expected him to leave the bulk of his estate to the university. His original and subsequent bequests had totaled over \$1 million, allowing the university to increase its faculty and student enrollment and improve its facilities. At this time the Common Street campus consisted of a Grecian-type central building housing the medical school, flanked by east and west wings. However, the search for a will proved fruitless, and Tulane's assets of nearly \$10 million were divided among his nieces and nephews.

The first president of Tulane University was William Preston Johnston, kin of Gibson, son of General Albert Sidney Johnston, who was killed at Shiloh, and president of Louisiana State University. Johnston's vision was that the new university would

cover the whole wide area of human knowledge, rising through regular gradations, higher and high-

er, to the utmost attainments of the human mind . . . It will have the ability, and therefore will have the right, and should feel the duty of assuming the leadership in public education in the State.

Because Paul Tulane's letter of donation indicated the desire to advance the "promotion and encouragement of education among the white young persons of New Orleans," the door was left slightly ajar for the admission of women. Women attended classes through Tulane's adult education program, which offered lectures, discussion groups, and an extremely popular free drawing class. About this time, Josephine Louise LeMonnier Newcomb, the widow of a wealthy New Orleans sugar merchant, was searching for a fitting memorial for her cherished daughter, Harriott Sophie, who had died at the age of 15 from diphtheria. As Newcomb pondered various projects, her friend Ida Richardson, whose husband was professor of surgery at Tulane, suggested that part of the university be devoted to the higher education of women. Both women were aware of the growing movement to admit women to men's universities. On the advice of President Johnston, Newcomb made an initial donation of \$100,000 "to be used in establishing the H. Sophie Newcomb Memorial College in the Tulane University of Louisiana." Established in 1886, Newcomb College became the first degree-granting coordinate college for women in the United States and served as a model for Radcliffe, Barnard, and Case Western Reserve for Women.

Professor Brandt V.B. Dixon was chosen as the first president of the women's college. The courses of study included classics, science, and modern languages, leading to bachelor of arts or science degrees. Courses in art, music, and "aesthetical gymnastics" were also offered. In 1894, additional donations by Newcomb led to the construction of a chapel, an art building and dormitory, and the Josephine Louise House, near the site of the original building, once a private residence, at the corner of Camp and Howard Streets. The chapel was a pet project of the benefactress, who ordered three stained-glass windows from Tiffany to adorn it. Today, the university owns 13 Tiffany windows, one of the largest collections in existence. Again, the purchase by Newcomb of Burnside Place in the Garden District allowed the women's college to move in 1891.

In 1907, eight women had attempted to enter the medical school, but were refused admittance. However, by 1911, women had been appointed to the medical faculty and, finally, in 1914, the faculty, with only one dissenting vote, allowed women admission. Lindal Hill Coleman, from Houston, Texas, was the first woman to receive a medical degree from Tulane. Bettie Runnels was admitted to the law school in 1897 and received her degree in 1898.

Other major changes were taking place in the late nineteenth and early twentieth centuries. The number of

faculty and students doubled, the old campus on Common Street was abandoned, and land for a new campus was purchased in 1893 on St. Charles Avenue, across from Audubon Park, the current site of Tulane's main campus.

On January 27, 1894, the cornerstone was laid for the Arts and Sciences building (now Gibson Hall). When the academic department moved to the new campus, it split into the College of Technology and the College of Arts and Sciences. The College of Technology was in fact the engineering school, which now had its own building, faculty, and programs. At the time, the graduate school was small, offering doctoral degrees only in the basic medical sciences. Library resources were not adequate to support advanced research. At the time of the relocation, the library possessed only 15,000 volumes, including government documents.

Several other colleges made their appearances in the early years of the twentieth century. The School of Architecture, first in the area, was founded in 1907. The College of Commerce, established through the efforts of New Orleans businessmen, was established in 1914, and Newcomb moved in 1918 to a site adjacent to the uptown campus. The School of Social Work was added in 1927, the first of its kind in the Deep South.

Although blessed with the kindness of donors, Tulane's plans to expand programs and facilities required a more aggressive approach to fundraising. Tulane held its first endowment drive in the 1920s, bringing in \$1,750,000.

After World War II, Tulane made a serious effort to strengthen its graduate programs, responding to the growing need for college and university teachers as the number of college students increased. The collections of three libraries, Howard Memorial Library, F.W. Tilton Memorial Library, and Newcomb College Library were merged in 1941 to provide the necessary support for the graduate school. Tulane developed guidance and financial assistance plans for graduate students through the doctoral level, and searched for and cultivated talent at the undergraduate level.

The 1950s and 1960s posed a further challenge for Tulane. The Supreme Court decision, *Brown et al v. Board of Education of Topeka*, prompted the Tulane administrators to address the possible admission of black students. Because the endowments of Tulane and Newcomb limited admission to white students, the university's board sought legal advice as to its obligations. In April 1961, the board issued a policy statement: "The Administrators of the Tulane Education Fund met Wednesday and noted that Tulane University would admit qualified students regardless of race or color if it were legally permissible." After a court challenge, Tulane was voluntarily desegregated by the board, and during the spring semester of 1963, black students were admitted without incident. Today, African Americans

comprise nearly ten percent of the student body. Campus cultural diversity programs are funded through a grant from the Ford Foundation's Race Relations and Cultural Diversity Initiative.

Today, Tulane offers undergraduate, graduate, and professional degrees through its 11 colleges and schools. It has averaged one new building a year for the last ten years. The university supports nine libraries with 2.1 million volumes. Howard-Tilton Memorial Library houses several special collections, including the Latin-American Library, one of the world's foremost collections of primary and secondary source materials dating from the sixteenth century; the Hogan Jazz Archive; the Maxwell Music Library; the Louisiana Collection; and the Southeastern Architectural Archive. The Amistad Research Center houses the country's largest collection of primary documents on African-American history.

Throughout its history, Tulane has made numerous contributions to medical advancement. Dr. Andrew V. Schally shared the Nobel Prize for medicine and physiology in 1977 for his research on brain hormones. Dr. Schally and Dr. Akira Arimura, Director of the U.S.-Japan Cooperative Biomedical Research Laboratories, were ranked among the 28 top medical researchers in the nation, based on article citations between 1965 and 1984. Tulane's School of Public Health and Tropical Research offers the only degree in tropical medicine in the United States.

Tulane has had a number of memorable faculty members. Alcee Fortier, a proponent of Creole culture and professor of French, intimidated his students who failed to master proper French pronunciation. Robert Sharp, professor of English and Greek, is remembered for his ability to recite an entire Shakespeare play and involve his class wholeheartedly in the experience. Brown Ayres, a 24-year-old engineer and physicist, delighted students with his improvised laboratory gadgets.

Some of the many outstanding graduates of Tulane include Michael DeBakey, the cardiac surgeon who performed America's first heart transplant; Timothy John Robbie, president of the Miami Dolphins football team; Linda Wilson, president of Radcliffe College and a science advisor to the U.S. Congress; Harold Rosen, inventor of the first synchronous satellite; Robert Harling, playwright and author of *Steel Magnolias*; and Howard K. Smith Jr., a Rhodes scholar and ABC news co-anchor. Speaker of the U.S. House of Representatives, Newt Gingrich, received a master's degree in 1968 and a Ph.D. in modern European history in 1971 from Tulane.

In his first meeting with the board, in 1883, William Preston expressed his dream of creating a great Southern university by teaching youth well, espousing a community-oriented program of adult education, and developing human knowledge through research. As historian John P. Dyer notes, his views were "strongly prophetic of the type of institution Tulane eventually came to be."

Further Reading: *Tulane, the Biography of a University*, by John P. Dyer (New York and London: Harper and Row, 1966) is an extremely detailed, eminently readable, and comprehensive study of Tulane through the mid-1960s. Herbert E. Longenecker, a former president of Tulane, presents a succinct history in *Great Vision, Amply Justified, the Story of Tulane University* (New York: Newcomen Society in America, 1968). Philosophical history and statistical detail characterize the early years of Tulane in Edwin Whitfield Fay's *The His-*

tory of Education in Louisiana (Washington, D.C.: Government Printing Office, 1898). John Kendall Smith represents a detailed biography of Paul Tulane in *Louisiana Historical Quarterly*, volume 20, 1937.

—Kathleen M. Conley

UNITED STATES MILITARY ACADEMY AT WEST POINT

(West Point, New York, U.S.A.)

Location:	West Point, 50 miles north of New York City, on the Hudson River.
Description:	A publicly supported, professional college for men and women, enrolling approximately 4,300 students, who, as cadets, are in the United States Army, and who must serve six years on active duty after graduation. The military academy is under the general direction and supervision of the Department of the Army. It is also a national historic landmark.
Information:	Director of Admissions The United States Military Academy 606 Thayer Road West Point, NY 10996-9902 U.S.A. (914) 938-3308
Visiting:	Visitors Center open daily, all year. West Point Museum, open daily, all year. Walking tours begin at Visitors Center. Guided tours provided by commercial service.

The United States Military Academy at West Point, New York, opened its doors on July 4, 1802, to ten “gentlemen cadets” who had no texts, no regular courses, and no discipline; they attended classes when they pleased, took vacations when they wished, took their meals in nearby homes, and lived in a barracks left over from the Revolutionary War. There was no four-year program; cadets were graduated at the pleasure of the superintendent. Two of the ten cadets were graduated from West Point after being there three months.

Almost 200 years later, the United States Military Academy at West Point hosts approximately 4,300 highly disciplined cadets of somewhat diverse backgrounds. Women and various minorities now account for 29 percent of the student body. Each cadet takes 15 required courses in mathematics, science, and engineering and 16 in social sciences, humanities, and public affairs; 4 intensive, summertime short courses in military science; and 11 year-long courses in physical education.

The 16,000-acre campus is an imposing array of parade grounds and great, gray-granite, fortress-like structures dominated by the stern Military Gothic of the Cadet Chapel. There are monuments to men with famous names, most of them graduates, most of them members of the historic cadet corps known as the Long Gray Line;

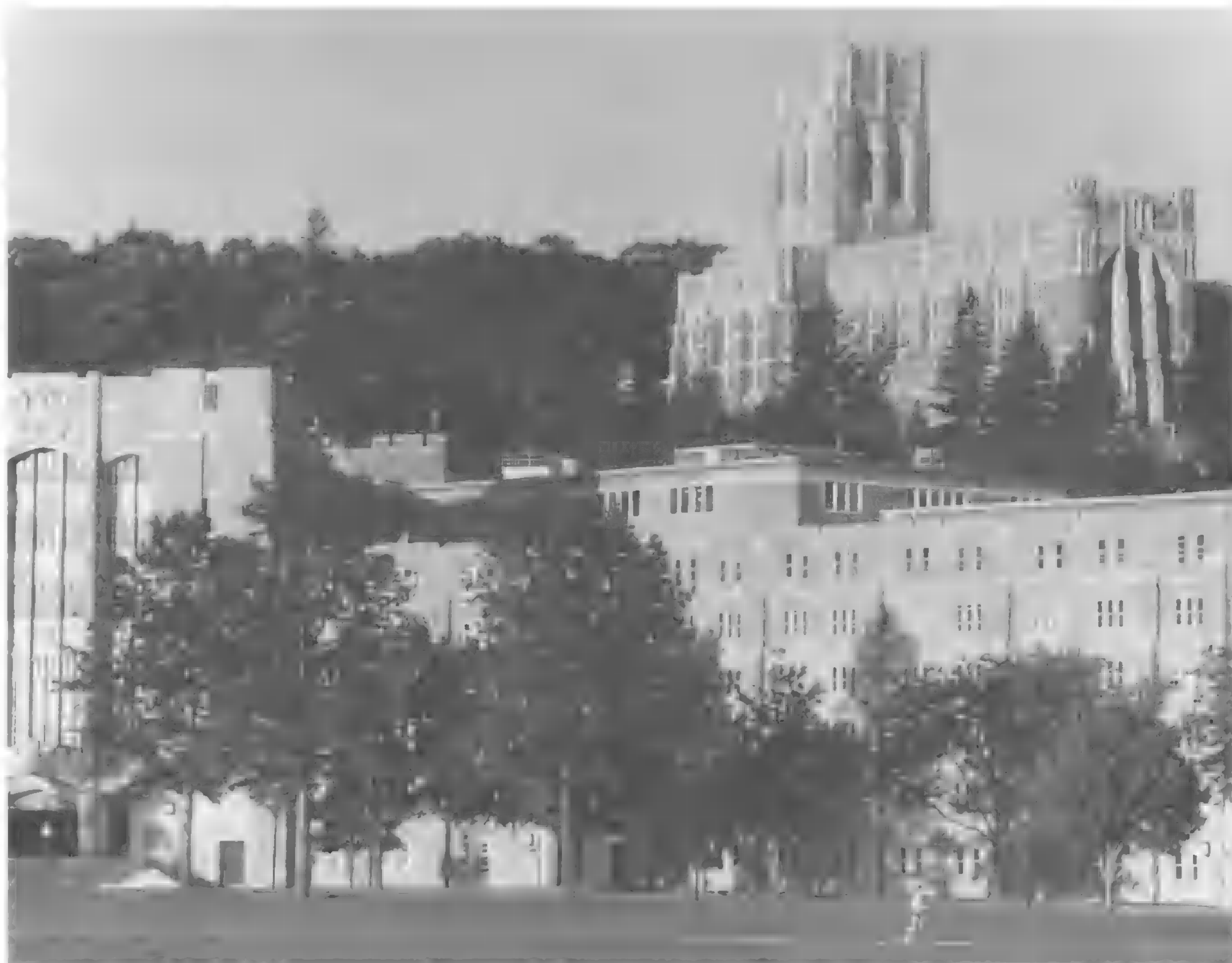
there are memorials to fallen classmates; and in the Old Cadet Chapel, built in 1836, one finds black marble shields inscribed in gold letters with the name, rank, and dates of birth and death of the senior American generals in the Revolutionary War.

West Point is a highly regarded academic and professional school with particular strengths in mathematics and engineering. Since 1922 West Point has produced more Rhodes scholars than all other colleges and universities in the nation, except for three. West Point is also a military post—the oldest, continuously occupied military post in the United States. It is a national historic site; and for many, it is a national shrine.

The academy opened as the Corps of Engineers at West Point, a strategically significant promontory on the Hudson River, 50 miles north of New York City, on hilly terrain already ringed with historic, Revolutionary War fortifications. Despite the fortifications, the British almost captured West Point, due to the perfidy of Major General Benedict Arnold, who offered to hand it over (along with General Washington and his staff) for a fee. (The inscription on Arnold’s shield in the Old Cadet Chapel is chiseled out, except for the words “Major General” and “1741.”)

One clear lesson of the Revolutionary War was that the United States needed professionally trained military officers who were Americans, rather than French or Polish or German. However, anti-Federalist Jeffersonians wanted nothing to do with an officer corps made up of upper-class sons of the well-to-do. So, despite numerous proposals over the years, a military academy had to wait until Federalists were out of office and Federalist officers discharged from the army. Jeffersonians then could make appointments of instructors and cadets from all classes of people. Within two-and-a-half months of his inauguration, Jefferson ordered the immediate creation of a permanent military academy; less than a year later, Congress formally authorized the United States Military Academy at West Point, “for the purpose of training engineers.” In the same legislative act, Congress reduced the size of the army and purged it of its Federalist officers. The idea behind both parts of this legislation was to shape a safe, non-aristocratic, standing army.

West Point is saturated with American history, and cadets know it well. They march past buildings named after President George Washington; Civil War generals Robert E. Lee, William T. Sherman, and Ulysses S. Grant; World War I general John “Black Jack” Pershing; World War II generals Omar Bradley, Douglas MacArthur, and Dwight David Eisenhower. They march past monuments in memory of fallen Union regulars in the



United States Military Academy at West Point

Civil War, fallen air cadets in World War II, fallen classmates and all U.S. Armed Forces members who died in Southeast Asia. Two graduates became president of the United States (Grant and Eisenhower) and one, Jefferson T. Davis, became president of the Confederate States of America; West Pointers commanded armies in all of the country's wars (except the War of 1812); and several graduates have explored space and walked on the moon, including Edwin "Buzz" Aldrin and Frank Borman. The cadet corps has marched en masse to meals since 1815, and the corps' gray full-dress uniforms commemorate an 1814 victory by General Winfield Scott over British forces at the Battle of Chippewa, near Niagara Falls, New York. Because the Americans' uniforms were gray, rather than blue (the tailor was out of blue), the British thought that they were facing poorly trained militia instead of well-trained regulars.

The military academy had almost no impact on national affairs during its first 15 years, for reasons both administrative and political. Classes ran from April through November because the physical plant was not adequate for West Point winters. The Secretary of War from 1808 to 1813 was completely hostile to the idea of a military academy. His failure to issue "report to duty" orders to cadets who had been appointed to the academy meant that on the day in 1812 when war was declared, the United States Military Academy was empty.

Administrative reforms later that year put the academy on more solid footing by making faculty members exempt from duty requirements elsewhere and by making West Point a military academy for *all* branches of the army instead of just for engineers. In 1815, President James Madison sent a pair of officers to study military schools in France and Germany and to collect books and

scientific instruments for use at West Point. One of the two officers, Sylvanus Thayer, was particularly impressed with France's *Ecole Polytechnique*'s outstanding teachers and scientists, its emphasis on mathematics, its small classes, and its blackboard drills for students. As West Point's first long-term superintendent (1817–33), Thayer had plenty of time to put into place much of what he learned in Paris. His ideas and practices had a profound impact on the academy, and had indeed, on the subsequent development of the naval and coastguard academies in the nineteenth century, and on the air force academy in the twentieth.

Thayer was appointed superintendent in 1817. His first days at West Point were inauspicious. Only 42 of 213 cadets were present for duty, and a number of them were "drinking and gambling and lounging about." Five of the faculty were under arrest for having protested his predecessor's policies, and six weeks after Thayer assumed command, his predecessor, Captain Alden Partridge, told a cheering cadet corps that he was taking his command back. It took several days for Thayer's letter about this turn of affairs to reach the Secretary of War and for a messenger to bring the reply to Captain Partridge: "You will deliver your sword to the bearer . . . and consider yourself under arrest."

Thayer immediately turned West Point into a military academy. Two days after he returned, this time firmly in charge, he ordered cadets to begin classes. He allowed no books of fiction, no newspapers, no unnecessary conversations at meals, and no trips to town. He established an extremely rigorous schedule for each academic day—every moment from reveille at dawn to lights out at 10:00 P.M. was accounted for. Cadets became soldiers as well as students. According to Thayer, being prepared for study assignments was a military duty. The shadow of Thayer's hand is very long indeed—cadets still face 16 hours a day of scheduled time, and being prepared for class is still a military duty.

Thayer's curriculum was equally formidable, and extraordinary in its own right. First-year students studied only mathematics and French. In the second year there was drawing, along with mathematics and French. Mathematics included algebra, Euclidean geometry, trigonometry, and logarithms during the first year, and geometry (analytical and descriptive), calculus, and "fluxions" during the second. Third-year students tackled mechanics, hydraulics, pneumatics, optics, magnetism, and astronomy, all under the heading of "natural philosophy," and in addition to ethics, fourth-year students learned civil engineering, field fortifications, the science of attack and defense, and principles of grand tactics.

The academy became the nation's first and, rather quickly, its most prominent engineering school. In 1830, 9 American colleges had West Point graduates on their faculties; ten years later, the number was 29; by 1860, West Point graduates were teaching at 78 institutions in

21 states. In addition, many of the nation's academic institutions used textbooks written (or translated from the French) by West Point faculty, and many academy-trained officers became civil engineers deeply involved in exploration, surveying, road and bridge building, canal design and construction, dam building, and railroad engineering.

West Point was not (and is not) simply in the business of turning out technically well-trained professionals, people with disciplined minds. To Thayer, the point of education was to develop character, and the way to develop character was to develop the soul and the body as well as the mind. *Character* meant military character: obedience to rules and schedules, unquestioning acceptance of authority, knowing one's place within a chain of command, commitment to duty, and commitment to being prepared at all times for anything that might happen or be needed. As it evolved, Thayer's definition of character as *duty* grew to include *honor* and *country*.

For the development of the mind, Thayer's approach required thorough and systematic preparations for performance, and then the performance itself. Classes were small, about 12 students each. The "Thayer principle of instruction" (as it has come to be called) was that every student would recite every day in every subject; that is, stand in front of the class, explain the theory involved in the day's lesson, and demonstrate its principles and practical operations at the blackboard, and do so according to a rigidly adhered-to formula; a mathematics class recitation might begin: "Sir! I am required to deduce a rule for extracting the *n*th root polynomials." Students were graded every day on their performance; at the end of four years, the cumulative grades for daily performance (and on the twice-yearly exams) determined class standing. Class standing—the rank order of merit—in turn determined a cadet's choice of branch of service and of duty location.

For the development of the soul, there was chapel. Attendance was compulsory. Officially nondenominational, services were essentially Episcopalian on the grounds that, as the army's first chief engineer, General Joseph Swift (and one of West Point's first two graduates) said it, such services "were deemed to be the most appropriate to the discipline of a military academy." Next, there was formal training in ethics that went beyond the classroom to include the thought-patterns and attitudes best summarized by West Point's famous honor code: "A cadet will not lie, cheat, or steal, nor tolerate those who do."

For the development of the body, there were athletics. Although athletics weren't available as such in Thayer's day, their development as a compulsory, four-year-long part of cadet life is certainly consistent with Thayer's scheme of things. In the early 1920s Superintendent Douglas MacArthur supplemented West Point's already excellent physical fitness programs with competitive ath-

letic activities in which all cadets were required to participate. The idea was to develop some of the essential qualities of a fighting soldier: an aggressive, competitive spirit, the strength and endurance to surmount severe physical hardships, and the ability to lead.

At West Point, new students did not just "show up" for registration; they were civilians who reported for duty on an early July morning between the hours of 8:00 and 10:00 A.M. to become military cadets, and from that moment, their characters were under constant assault by smartly dressed, sharp-tongued upperclassmen wearing clean white gloves. The next six weeks were known as "Beast Barracks." In September, if they had survived the emotional, mental, and physical demands of "Beast Barracks," new cadets would become *plebes*, a Greek word which connotes "vulgar, coarse, common people": the lowest of the low. Plebes were subjected to severe mental and emotional stress by upperclassmen. This well-established (and notorious) custom has been known as "hazing." Congressional legislation in 1901 put a legal end to the forms of hazing which had become physical (and violent, after the Civil War), but almost two decades later, the "barking, hissing, and snarling" of upperclassmen drove one cadet to suicide. As superintendent, General MacArthur tried to halt the practice, without success. West Point continues to struggle with cadets who engage in hazing.

The first major American conflict after its founding—the American Civil War (1861–65), which pitted classmate against classmate, had almost no impact on the activities at West Point. The war opened with West Point graduates firing at each other—P.G.T. Beauregard, a Confederate general, had been superintendent of the academy (albeit briefly) just ten weeks earlier; the commander at the fort being fired upon (Fort Sumter) had been Beauregard's artillery instructor at the academy; and one of the Confederate officers firing a cannon had been graduated less than a year earlier.

By May 1861, three-quarters of the Southerners at West Point had resigned and gone to their home states. To staff the Union Army's officer corps, first-class cadets (seniors) were commissioned a month early. Early on, the engineering detachment of men and officers took the few remaining horses and left as well. Soon, every able-bodied officer had gone to war; however, they were soon replaced by the ever-increasing number of wounded. Apart from these departures, the routine at the academy proceeded as usual. Cadets were more interested in the increasingly popular sport of baseball—said to have been invented by West Point graduate Abner Doubleday—than in the war.

Early in the war a number of the military academy's graduates were charged with incompetence, charges that had some basis in reality. The West Pointers directing the Union's armies—George McClellan, Don Carlos Buell, Henry W. Halleck, and later John Pope, Ambrose Burn-

side, and Joseph Hooker—did a poor job. On the other hand, the armies of the Confederacy, which succeeded early on, were also commanded by West Point graduates—Robert E. Lee, Thomas "Stonewall" Jackson, George Pickett, and James Longstreet. That the bonds forged at West Point were stronger than their sectional enmities is illustrated by the story that Grant sent congratulations across Petersburg's trenches to George Pickett on the birth of his child.

By the end of the war, West Pointers dominated the commands in both armies. Of the 296 graduates who supported the Confederate states, 151 became general officers, while in the Union Army the number was 294. Of the 60 most important battles in the war, all but five of the armies on both sides were commanded by West Pointers; in each of the other five, one of the commanders was a West Point graduate. West Point was one of the first institutions to reunite after the war. In 1869, alumni from both sides formed an alumni association and chose Sylvanus Thayer as president.

After the Civil War, the intellectual and institutional inbreeding of the faculty turned the academy into a progressively rigid and unchanging institution, ever-mindful of its glorious origins and military traditions and out-of-touch with the real army's leadership needs. West Point ended up at the turn of the century more or less isolated from other colleges by its refusal to open up its totally prescribed curriculum, or to shift its emphasis from character building to the intellectual development of the individual.

When America entered World War I, once again a class was graduated early. The class of 1917 was graduated in April, two weeks after the declaration of war against Germany, rather than in the usual commencement month of June. During this war, the high command of American armies was dominated by West Pointers to an even greater extent than it was during the Civil War. Of 38 corps and division commanders in France, 34 were West Pointers. The three field armies were all headed by West Point men, and the commander-in-chief of the American Expeditionary Force was academy graduate John J. Pershing.

After becoming superintendent in 1919—after the war's end—Douglas MacArthur asked, "How long are we going on preparing for the War of 1812?" MacArthur attempted a number of changes in faculty preparedness, in curriculum, and in the cadet corps' customary ways of doing things, but most were rescinded shortly after his term of office ended (two years early), or were resisted from the beginning by the governing board, the faculty, and the cadets.

American forces in World War II were led in both theaters of war by West Point graduates. Forces in Europe were under the command of Dwight Eisenhower (who went on to become America's 34th president); those in the Far East were under the command of Douglas MacArthur. Other West Point graduates who distinguished

themselves in the conflict were Omar N. Bradley, George S. Patton, and Henry "Hap" Arnold.

After World War II, training programs and academic programs changed somewhat to reflect new technologies—for example, a sub-course was added in nuclear physics, as well as a course in applied psychology. In 1947, the earlier replacement of horse cavalry with mechanized armor led to the termination of horsemanship, polo, and the annual horse show at West Point. And questions about changing West Point and Annapolis to accommodate the new service that emerged from World War II were resolved in 1949 by the decision to open ■ separate academy for Air Force cadets.

Change finally came about under the superintendency of General Garrison Davidson (1956–60), in part because it had to: enrollments were declining and attrition rates were around 25 percent. West Point was not attracting students. Of those who came, too many left. The academy's image had been tarnished by the 1951 cheating scandal, which resulted in the expulsion of the entire varsity football team, including reserves. The cheating scandal, Davidson felt, came from a loss of perspective about why people were at West Point in the first place. In the area of military discipline and training, Davidson initiated a review of hazing practices and introduced changes in the way cadets were grouped together in companies, from how tall they were (a Thayer creation) to a combination of scholastic abilities, physical abilities, leadership potential, and height—for its day and for West Point, this was a radical change. In academics, Davidson urged faculty members to publish in professional journals and to keep current in their academic fields through occasional sabbaticals, and he required permanently assigned faculty members to obtain doctorates.

Davidson's regime ended before two events that profoundly affected West Point: the Vietnam War and another cheating scandal. The conflict in Vietnam was one of the few outside events to penetrate the otherwise isolated academy. Some new cadets arrived with a distrust of authority, rare for academy entrants; some upperclassmen hid wigs, which they wore on leave when in the company of long-haired civilian friends; and some of the faculty, mostly in social sciences, were quietly against the war. The class of 1966, which lost more members in Vietnam than any other West Point class, resigned at a rate 50 percent higher than classes from the 1950s and early 1960s. The second major scan-

dal occurred in 1976 when 50 students were found guilty of cheating on an engineering examination. The reverberations of the scandal eventually led to the intervention of the Secretary of the Army.

In the end West Point changed. (One 1950s cadet refrain cynically referred to the academy as "120 years of tradition unmarred by progress.") Many of the reforms rejected or "studied to death" during the Davidson years were implemented by subsequent superintendents. Shifting to "positive leadership techniques over verbal abuse" almost immediately cut attrition rates during "Beast Barracks" from 10 percent to 5. "Beast Barracks" became "Cadet Basic Training." Mandatory attendance at chapel was ended by the Supreme Court in 1972. The prescribed curriculum was ultimately replaced by a core program of 31 academic courses plus 4 intensive short courses in military science and 4 year-long sessions of physical education. "Every cadet, every class, every day" is no longer required but it is still the standard for classroom performance.

By act of Congress, women were admitted to West Point (and to all the service academies) for the first time in 1976, 106 years after the first black was admitted (1870), and 99 years after the first black was graduated (1877). The top graduate in the class of 1995 was a woman.

West Point remains a military academy, of course, but sounds slightly civilian when it calls itself "the country's premier leader-development institution" and says that its mission is to train individuals "who will lead America into the twenty-first century."

Further Reading: Three books deal with the U.S. Military Academy in the context of all the service academies; all three are well documented and footnoted: *Liberal Education in the Service Academies* by William E. Simons (New York: Bureau of Publications, Teachers College, Columbia University, 1965); *Neither Athens nor Sparta?: The American Service Academies in Transition* (Bloomington and London: Indiana University Press, 1979); and *Soldiers and Scholars: Military Education and National Policy* by John W. Masland and Laurence I. Radway (Princeton, New Jersey: Princeton University Press, 1957). Ernest Dupuy provides a biography of one of West Point's most important figures in *Sylvanus Thayer, Father of Technology in the United States* (West Point, New York: The Association of Graduates, 1958).

—Richard Allen Chapman

UNITED STATES NAVAL ACADEMY

(Annapolis, Maryland, U.S.A.)

Location:	On the south bank of the Severn River in Annapolis, Maryland; 33 miles east of Washington, D.C., and 30 miles southeast of Baltimore.
Description:	A four-year service academy founded in 1845, as the Naval School.
Information:	Candidate Guidance Office United States Naval Academy 117 Decatur Road Annapolis, MD 21402-5018 (410) 293-4361 (800) 638-9156

The Naval School, the forerunner of the Naval Academy, was founded in 1845, following a protracted struggle to demonstrate the need for an institution of its kind. Congress, the public, and many navy men alike long doubted the usefulness of academic instruction for sailors. Through the early nineteenth century, recruits were admitted into the navy very young, some just nine years old, and their entire education was practical and received aboard ship. An emphasis on workaday rather than academic instruction apparently explained the success of the British Navy over its colonial rivals, and the U.S. Navy emulated the British champions. Many of the earliest proposals for a naval school were advertised merely as a means to an orderly navy, for the young recruits were mainly incorrigible boys sent by schools and families unable to manage them.

Between 1800 and 1840, a number of individuals drafted a total of 26 different plans for a naval academy, but none was approved by Congress. Senators and representatives not only remained skeptical that sailors benefited from shore schooling, but they also worried that an academy would produce elitist officers out of spirit with contemporary liberalism. Two compromise programs were agreed to before the Naval School was organized. In 1813, Congress approved the appointment of schoolmasters to the navy's largest vessels, the 74-gun ships, but the program was a failure. Initially, teachers were paid and accommodated badly, and so the navy was unable to attract qualified men. Even after remuneration and facilities were improved and better teachers retained, the difficulty of educating children burdened with the duties of midshipmen proved insurmountable. Between 1821 and 1836, four shore schools (three of them housed in docked

frigates) opened, each running courses of one year or less to prepare midshipmen for their promotional exam.

The momentum behind the drive to found a proper naval academy was strengthened by two events. First, the U.S. Navy placed its first orders for steamships in 1839, and thereafter had an indubitable need for skilled engineers. Second, the esteemed Professor William Chauvenet, the head of the shore school in Philadelphia, formulated a plan for a two-year naval academy which might be opened without congressional sanction. Chauvenet's scheme was rejected by Secretary of the Navy John Mason, but a derivative plan was successfully instituted by Mason's successor, George Bancroft.

Bancroft moved quickly to establish the academy in the summer of 1845. First, he arranged for the U.S. Army to render Fort Severn to the U.S. Navy, where the Annapolis campus was soon located. Next, he dismissed half the navy's schoolmasters and reallocated their salaries to the inchoate school. He then appointed Commander Franklin Buchanan the school's first superintendent, and delegated him responsibility for its organization. Buchanan handled the job exceedingly well, and oversaw the inaugural ceremonies of the United States Naval School on October 10, 1845.

The school was originally housed in just eight small buildings already standing within the confines of Fort Severn, which was bordered by the Severn River and Annapolis Harbor on the eastern and northern sides respectively, and by bulwarks on its two inland faces. In 1845, a faculty of 7 instructed 36 midshipmen ranging in ages from 13 to 27. Programs of study varied in length according to the number of years each student had already served in the navy. The pupils received no military training per se, but were given a sound, general education thought to be well-suited to the duties of a naval officer; the curriculum included chemistry, ordnance, gunnery, steam engineering, history, composition, mathematics, natural science, geography, and either French or Spanish.

In 1846 Congress allocated \$28,800 for infrastructural and academic improvement of the Naval School, despite Bancroft snubbing congressional authority when he created it. One may speculate that congressmen were loathe to appear insufficiently devoted to the military, for the Mexican-American War had begun just four months earlier. In any case, Congress continued to support the academy at Annapolis in their future budgets, and the school rapidly evolved: it was renamed the Naval Academy in 1850, the same year in which a fourth term of academic study was added. In 1851, Buchanan determined that the four years of academic study should run consecutively,



United States Naval Academy

rather than in pairs divided by two years at sea. Landfill added in 1853 extended the academy's grounds substantially on each of its two littoral fronts, and 29 buildings were raised on the campus between 1846 and 1861. By 1860, there were 28 members of the faculty, half of whom were civilian, and 281 midshipmen enrolled.

The rapid development of the academy was retarded by the Civil War, both because the navy devoted its resources to battle and because many cadets returned to the southern states from which they hailed. Following the Confederate attack on Fort Sumter, April 12, 1861, Superintendent George Blake worried that the civilian population of Annapolis would side with the South, and attack the school. Realizing that many of his students were either southerners or "little boys," Blake prepared to blow up the munitions on campus and flee with his pupils on the *USS Constitution*, which docked at Annapolis. His dire plan was not realized, however, thanks to the arrival of Union reinforcements who turned the campus into a military camp.

Blake requested and was granted provisions to temporarily move the academy to Fort Adams, in Newport, Rhode Island. Most of the students set sail for the new campus aboard the *Constitution* on April 26, led by the popular commandant, Christopher Rogers. Ten academy midshipmen were promoted to officers and commissioned to serve the Union Navy before the move, and 102 more just after. Thus, just 76 students remained in the first student body to reside at Fort Adams. The quality of education at the school declined severely during the war. Only 1,000 books were even unpacked at Newport, and new recruits were admitted only if they were literate. The faculty was constantly in flux, as its members were called into battle. Morale was severely battered by the loss of reliable leadership, the division of the departure of old mates for the Confederate states, and the general anguish of war. Meanwhile, the Annapolis campus was transformed into a Union Army hospital which proved so valuable that the academy remained at Newport even after Maryland was securely under Union control.

Following the war, Secretary of the Navy Gideon Welles determined to restore the Academy to its former stature, and to the haggard facilities at Annapolis. In September 1865, he wisely rendered responsibility for the renovation to Vice Admiral David Porter, whom he named the Academy's sixth superintendent. Porter was a man of demanding standards who asked specifically to head the school. He believed that a war with America's European rivals was immanent, and he expected to head the navy when that war began. Thus, he saw himself as training officers to serve under his command in battles not long in the future.

Porter secured generous funding for the academy through the political connections he had made in Washington during the war, and he used much of the money he had gathered to improve the campus. Shortly after taking office, Porter purchased three lots of land, totaling 81 acres, near or adjacent to Fort Severn, and he embarked on

an ambitious building program. By 1869, the academy added an armory, engineering hall, chapel, chemistry laboratory, science building, and new midshipmen's residences. In addition, the former governor's mansion was transformed into a new library and offices for Porter himself.

Porter also reoriented the academy to provide an education more specifically geared toward naval duties. Most notably, he dismissed four civilian instructors and lured 21 bright naval officers to the faculty. He mounted a 13-inch gun on a sea-wall behind a classroom building, and cadets reportedly practiced their gunnery on it even while classes were held nearby. Porter retained two new gun boats on which cadets trained, and working models of sailing ships were constructed in a hall of the Department of Seamanship.

The academy fell on hard times in the years following Porter's departure for, at the same time, the navy's budget was drastically cut as national interest in the military waned. The number of fully commissioned ships fell from several hundred during the war to just 52 in the 1870s. Available positions for naval officers diminished, and the new superintendent, Francis Ramsey, responded with severe measures. In 1881, he instituted the practice of dismissing cadets whose academic progress was unacceptable, whereas previously they had simply been forced to repeat a year of study. The following year, Congress passed a resolution that the navy should appoint only as many officers from each graduating class as there were positions vacated the previous year. Graduates from the bottom of each class were dismissed with only diplomas and one year's severance pay (\$950). Hundreds of men were turned away from the naval careers for which they spent six years preparing.

Morale at the academy, which obviously suffered under the draconian legislation of 1882, was improved by the acceleration of athletic programs at the school. Football matches against Johns Hopkins University in 1882–84 led to expanded seasons in the years following, and the navy "N" athletic letter was introduced by Cadet Dennis Michie in 1890. A goat was unofficially introduced as the school mascot in the army-navy game of the year. It was brought to the contest on a whim, and various other mascots were tried in succeeding years. Commander Colby M. Chester, commandant of cadets, is responsible for establishing a permanent place for "Bill the Goat." Colby had kept a goat aboard his ship prior to his service at the academy, and he persuaded the cadets to retain the goat as their own mascot.

The Spanish-American War erupted suddenly, when the Battleship *Maine* was blown up in Havana Harbor on February 15, 1898, killing 266 of her crew. It is still not known whether or not the Spanish were responsible for the explosion, but the war that Porter had predicted began nonetheless. The navy was short of junior officers due to the Congressional Act of 1882, and therefore the entire first and second classes from Annapolis were graduated early, and dispatched to the Caribbean. The Americans won the

battle handily, and possibly the greatest change at the academy during the war was that the campus was partially transformed into an exceptionally civil prisoner camp. The captured Spanish Admiral Don Pascual Cervera y Topete and his crew were lodged in various buildings at the academy, and were allowed to visit Annapolis freely, having promised not to attempt an escape. The Spaniards were repatriated the following September.

Following the war in Cuba, the navy was rewarded with prestige, generous funding, and new territories in the South Pacific rendered by the Spanish, and the academy grew with the navy. Between 1901 and 1913, an entirely new plant was constructed, and the landfills of 1853 were extended still further north and east. The need for new junior officers in the fleet allowed the class of 1907 to graduate early, and in 1912, Congress provided that all graduates of the academy would automatically receive the status of ensign, thus eliminating the two-year probationary period of years past. In addition, the academy acquired a coat of arms in 1898, and a team fight song, "Anchor's Aweigh," in 1907.

It was during these years of growth and development that the academy offered its first postgraduate classes, designed to educate officers in burgeoning technological fields such as aviation and electrical engineering. The program was originally housed in two attic rooms, and was run by two instructors. In 1912, the Postgraduate Department of the Naval Academy was officially inaugurated, although degree-earning courses of study were then only completed at other institutions. It was not until after World War II that the school was moved across the nation to Monterey, California. Today, the Naval Postgraduate School educates approximately 1,800 students in 40 technical subjects.

The Naval Academy struggled with several issues during the period between the two world wars. First, the practice of hazing grew decidedly brutal in the early 1920s; plebes were routinely paddled by upperclassmen literally swinging from the ceiling, for example. Superintendent Henry Wilson, who assumed the leadership of the school in 1921, was a stern disciplinarian who brought order to the campus at the expense of creating a rather severe environment. In one instance, Wilson dismissed a midshipman wearing civilian clothes in town as he strolled with his new bride. At the same time, the United States ceased its production of new battleships for ten years by an agreement with the British and Japanese governments, thus reducing the number of officers' positions in the navy at a time when enrollment was soaring; between 1916 and 1919, an influx of patriotic recruits brought the student body from below 800 to more than 2,250. Ship production had hardly resumed when the effects of the Great Depression descended on the academy. Budget cuts in 1932 forced the navy to fire several civilian professors at the academy, and to commission only 216 of 413 graduates of the class of 1933. Happily, the men passed over were commissioned

the following year by an act of Congress, but the humiliating experience had a deleterious effect on the morale.

The Academy resumed an accelerated graduation schedule after America's entrance into World War II. The class of 1941 was graduated four months early, and a three-year curriculum was temporarily instituted beginning with the class of 1943. In addition, the admission and graduation of recruits was stepped up to meet the navy's personnel needs. Between February 1941 and June 1945, the academy produced 7,500 officers, 4,304 regular midshipmen, and 3,319 reservists. Academy graduates of the classes 1931-41 comprised the core of the navy's dangerous submarine, destroyer, and air squadron command, and approximately 12 percent of them were killed in action. However, except for the fact that many instructors were called into active duty and replaced by civilians, life for those young men remaining at the academy was little affected by the war.

The Academy graduated its first black midshipman, Wesley Brown, in 1949. Five blacks had been admitted to the academy previously, three shortly after the Civil War and two more in the 1930s, but all either failed out or resigned. Brown wrote of his experience at the academy in the *Saturday Evening Post*, where he reported having been subjected to extraordinarily harsh scrutiny during his first year. However, he claimed that after he passed through that trying time, he was thereafter treated fairly. "I never received special attention, either positive or negative," Brown wrote, "It was a lesson in democracy which many institutions could not imitate." Women did not win the right to enter the Naval Academy until 1976, and then only through an act of Congress that ran counter to the express wishes of the navy's leaders.

The academy has remained on a rather steady course since World War II. The campus was modestly extended by land purchases and new landfills in 1955, and more recently, the academy added the Nimitz Library, Rickover Hall engineering complex, and the Hendrix Oceanography Laboratory. The academic and practical curricula at the academy have evolved to meet the needs of a technologically advanced navy, of course. Classes in nuclear physics, jet propulsion, and electronics were added as early as the 1950s. The academy continues to enroll approximately 4,000 midshipmen, as it did in the late 1940s.

Further Reading: *The U.S. Naval Academy: An Illustrated History* by Jack Sweetman (Annapolis, Maryland: Naval Institute Press, 1979) is a well-written and readily available book covering all periods of the academy's development through 1979. *The Spirited Years: A History of the Antebellum Naval Academy* by Charles Todorich (Annapolis, Maryland: Annapolis Naval Press, 1984) is a very interesting book devoted to the formative years at the academy.

—Christopher Hoyt

UNIVERSITY OF ABERDEEN

(Aberdeen, Scotland)

Location:	In central Aberdeen, 130 miles north of Edinburgh.
Description:	A public university enrolling approximately 10,500 students in undergraduate, postgraduate, and professional faculties.
Information:	University of Aberdeen Regent Walk Aberdeen AB9 1FX Scotland (01224) 272014 Fax (01224) 272086
Visiting:	For information about touring the university, contact the university at the above address.

Few universities can claim a more intimate connection with the history and development of their region and people than the University of Aberdeen. For centuries, Aberdeen molded the opinion, beliefs, and character of Scots north of the River Tay. Aberdeen graduates provided most of the educated men in the north of Scotland. It has been said of the north in the nineteenth century that chances were that Aberdeen graduates would “baptise you, teach you, hire you, treat you when you were sick, draw up your will, and pronounce you dead.”

It may also be said that Aberdeen has had a greater effect on the outside world than most other universities. The university for generations produced far more educated men and women than its lightly populated region could absorb, and in consequence its graduates have brought the benefits of an Aberdeen education to the ends of the earth.

In 1995, Aberdeen University celebrated the 500th anniversary of its founding in 1495 by William Elphinstone, Bishop of Aberdeen, under a bull of Pope Alexander VI, dated February 10, 1495. This charter had been requested by King James IV, and the foundation was officially laid for Saint Mary's College on September 17, 1505, with the promulgation of Bishop Elphinstone's constitution. It was renamed King's College shortly thereafter. Aberdeen was Scotland's third university after Saint Andrews and Glasgow and the fifth university in Britain. Note that, in the Scottish context, the university is the educational corporation and the college is the body of scholars—teachers and students—within the university.

Today Aberdeen also incorporates a second ancient university and college, Marischal College, founded in

1583. Marischal was often a fierce rival of King's College before their union on September 15, 1860, as the University of Aberdeen.

Alexander VI's founding bull noted the remoteness and barbarity of Aberdeen and the Scottish North, isolated “by firths and very lofty mountains” and “populated by rude and ignorant people.” The bull authorized a *Studium Generale*, that is, a university, modeled on Bologna and Paris. Bishop Elphinstone's foundation was a medieval university primarily intended to spread literacy and the Gospel in this wilderness at world's end. It had four faculties: arts, law, medicine, and theology. The faculty of medicine, founded in 1497, was the first in the British Isles.

Elphinstone located the college in the sleepy Old Town of Aberdeen, a site dominated by the cathedral and monastic establishments. All officials and faculty of the college, except the Mediciner, were required to be ordained. The university's charter stipulated that the office of chancellor was to be held *ex officio* by the bishop. The university was to be supported by the revenues of an Augustinian hospital and several parishes. Liturgical ritual was integral to daily life. The importance of music was emphasized. King's College was tied more firmly to the church than any other university in Britain before or since, although it taught laymen as well as clerics. King's College remained staunchly Catholic until Protestantism was victorious. When that happened, King's found it difficult to adjust to the new religious climate.

On April 2, 1593, George Keith, Fifth Lord Marischal, a prominent reformer, founded another college and university in Aberdeen. Marischal and been on an unsuccessful commission to reform King's College to Protestant principles in 1582. When he became King's Commissioner for Aberdeen, Banff, and Kincardine in 1592, King's College came under his jurisdiction. His college, located in the New Town of Aberdeen, a vigorous commercial center and leading seaport of the kingdom, was probably intended to show King's College the path to reform by example. It was enthusiastically supported by the New Town's merchants as providing the educated men necessary for opening new European markets. The new foundation, Marischal College, had a single faculty: arts. It was funded by a number of confiscated church properties granted to the Lord Marischal by the king. Its practice was essentially the plan that reformers had attempted to impose on King's College. Marischal College was aggressively Protestant and required an entrance oath, eventually abolished in 1887, designed to exclude Catholics.



University of Aberdeen

Of the two colleges, Marischal was smaller, poorer, and had inferior buildings, but in the beginning its scholarship flourished, while that of King's languished. Early in the seventeenth century, the tide began to turn when Episcopalianism, favored by the king, arose as a moderate and conservative Protestant alternative to the more radical Presbyterianism.

When Patrick Forbes, a learned, pious man with great political and administrative skill, became Bishop of Aberdeen in 1618, he petitioned the king to improve the ruinous state of King's College. In response, the king sent a commission to examine both King's and Marischal Colleges. The commissioners were forcibly denied entrance to Marischal College, as Marischal saw the commission as interference by the bishop in the affairs of a rival college. The visitation of the commission resulted in the repair of King's College by using funds from the royal treasury and the restoration of offices that had been abolished by the reformers. Marischal received no royal largesse.

Bishop Forbes was an enthusiastic man who gathered to King's College a brilliant body of theologians who made Aberdeen first the most brilliant, and then the most oppressed town in the kingdom. Bishop Forbes and his coterie of Divines were so influential that they were respected by all and even influenced the teachings of Marischal College.

The bishop put the college library on firm footing, inspired benefactions, and introduced a printing press to Aberdeen in 1622. Most importantly, Forbes, a firm Presbyterian when consecrated bishop, became a leading proponent of the Episcopalian cause supported by the affirmative and vigorous "Aberdeen Doctors." These six professors, four from King's and two from Marischal College, put Episcopalianism on a firm philosophical footing and brought most of Aberdeen into its fold.

In 1638, the Covenant, a contract between God and Scotland based on Presbyterian principles, was circulated throughout the kingdom, and a majority in every town accepted it—except for Aberdeen. A commission came to implore and convince Aberdeen to sign. They were repulsed by the doctors, who argued, "If it were so, which we do not admit, why force it upon us?" In 1639, an army under Montrose came to force the town to sign. The chancellor of King's was deposed. The faculty was forced to sign the covenant, then deposed, and the Earl Marischal, chancellor of the rival college, was named governor of the town.

War between the Presbyterian Covenanters and the Episcopalian Royalists was the consequence. Aberdeen was conquered and would have been razed except for the intervention of the Earl Marischal. The town fathers were forced to sign the covenant, and Episcopalianism was suppressed. While these hostilities lasted only a year, they were the first in a series of religious wars waged intermittently throughout Scotland until the end of the Glorious Revolution in 1690.

The purge of King's College ended a decade in which Aberdeen was one of the most brilliant centers of culture, classical learning, and divinity in its time. Human learning was now disdained. One parson complained that the universal cry had become: "Downe doctrine and upp Chryste."

In 1641, King Charles I united the two colleges as "King Charles" or "The Caroline University." The union, which was marked by continual inquisitions, lasted until the restoration of the monarchy in 1661. (The only period when the colleges ceased operations in Aberdeen occurred during this period of union. In 1647, the plague struck and King's College students fled to Fraserburgh, while Marischal students were transferred to Peterhead.) Upon separation the colleges became acrimonious and confrontational rivals. Theology monopolized seventeenth-century Scottish thought, and perhaps the best that can be said for the two colleges is that they survived. Their survival and their maintenance of a measure of independent thought was in fact a triumph, as it has been said of the Presbyterian establishment during this time: "when the Scotch Kirk was at the height of its power, we may search in vain for any institution which can compare with it except the Spanish Inquisition." The rivalry between the colleges also impelled them to expand their curricula and erect new buildings in an attempt to outdo each other, with Marischal usually taking the lead.

In 1690, the Scots Parliament passed control of universities to the crown. It has been accurately said that "in the seventeenth century the Church ruled the Universities, during the eighteenth the Universities returned the compliment." Subscriptions to an oath of allegiance to the king and a confession of faith were demanded from university officials and faculty. Professorial positions were made competitive.

Aberdeen's universities cannot be said to have taken their oaths of allegiance seriously. The chancellor of Marischal College, the last Earl Marischal, and his younger brother, the famous Marshal Keith, rushed to the Jacobite cause in 1715. The Earl Marischal attended the raising of the standard on the Braes of Mar, which resolved to raise arms for the Old Pretender. The two brothers proclaimed James king at Aberdeen's market cross before the assembled universities. In retribution a royal commission in 1717 swept the universities virtually clean. Only one professor was left in his position. This was the fifth and last purge of the colleges. Never again has the university been officially involved in political issues. However, a legacy survives from the Jacobite rebellions. Many of the memorable songs and poems about the Jacobites appear to have been written by Aberdeen students and graduates.

This purge enabled the universities to concentrate on providing service to the community. The eighteenth century was a period of tremendous commercial growth for the city due to the improvement of the economic situation

in Scotland as a result of the union of the English and Scottish Parliaments in 1707. Scotland had never been as prosperous before, and the universities reevaluated their role of educating the common man and providing an education suited to the needs of the people. In this, Marischal College led the way by placing a major emphasis on medicine and advancing the pure and applied sciences, coupled with modern philosophy. Some of Marischal's professors attained distinction and gave life to the intellectual culture of Aberdeen. Thomas MacLaurin, the one mathematician of the first rank to be trained in Britain, held the mathematics chair for eight years and produced some of his best work during that time. Patrick Copeland made Marischal famous for popular physics, erected an astronomical observatory, set up Aberdeen's first museum and, for three years starting in 1785, gave evening courses in mechanics to the public. The attempts of King's to move in a similar direction faltered as protests from its graduates kept it rooted in classical learning and philosophy.

In the eighteenth century, university curricula were standardized. Specialized teaching was introduced at Marischal, replacing the previous practice of "regenting," where each professor taught the entire curriculum. This destroyed the rigidity of education and gave professors the scope to expand their interests and depth of learning. Unfortunately, among Scottish universities, Aberdeen's colleges were slowest to change and, in change, King's was well behind Marischal. Regenting was not replaced by the specialized teaching of the professorial system at King's until 1799. It was the last Scottish university to do so. It is a measure of King's conservatism that Edinburgh, the youngest of Scottish universities, had been first to eliminate regenting in 1700.

Various attempts to unite the two colleges failed in the eighteenth century, as did attempts by both colleges to establish their own medical schools rather than just continue with lecture-based faculties of medicine.

The Universities (Scotland) Act of 1858 united King's and Marischal Colleges on September 15, 1860, as the University of Aberdeen. Arts and divinity were taught at King's. Law and medicine were taught at Marischal. King's buildings were expanded to accommodate the influx of arts students from Marischal, and a new library was built at King's. Aberdeen got, together with Edinburgh, a seat on the General Medical Board. The act of 1858 established universities as little scholarly republics in the midst of the secular world by providing a democratic structure of university governance, government funding, government building maintenance, and consolidation of bursaries to provide professors with adequate compensation. The importance of this act cannot be overestimated. It made the Scottish universities financially secure, public institutions free from government interference. Through the Representation of the People (Scotland) Act of 1868, the University of Aberdeen shared a seat in parliament with Glasgow University.

Medicine finally achieved a firm footing in the nineteenth century, and by 1893 Aberdeen had 367 medical students. Women were admitted to graduation in 1892, and the university took the rough outline of the form it has today with the establishment of a science faculty in 1894. It is interesting to note that the great majority of female graduates from 1894 to 1942 were over 40 years of age at graduation.

Aberdeen graduates have made their mark. Alumni have been governors of Newfoundland and Canada, Jamaica, Barbados, Lagos, Nyasaland, the Gold Coast, Ceylon, Hong Kong, the Straits Settlements, Queensland, Tasmania, South Australia, and the Windward Islands.

Men of letters associated with the university include: Dr. John Arbuthnot, originator of John Bull; Thomas Urquhart, translator of Rabelais and biographer of the Admirable Crichton; Arthur Johnson, "The Scottish Ovid"; John Skinner, songwriter acclaimed by Robert Burns; James Beattie, the poet; James Macpherson of Ossian fame; George Macdonald, teller of commonplace and mystical tales; and the novelist Eric Linklater.

Other graduates were instrumental in founding the College of William and Mary, the University of Pennsylvania, McGill University, and the Universities of Toronto, Manitoba, Saskatchewan, Alberta, South Africa, Cape-town, Madras, Calcutta, Singapore, Hong Kong, Queensland, Western Australia, Sydney, Tasmania, and Otago, and the College de Marine in St. Petersburg.

Aberdeen alumni have dominated the field of tropical medicine through founding institutions for the study and treatment of tropical diseases: James Cantlie founded the Royal Society of Tropical Medicine and Hygiene; Patrick Manson founded the Hong Kong College of Medicine and the London School of Tropical Medicine; and John Simpson founded the London Hospital for Tropical Diseases.

Aberdeen graduates identified the causes of malaria and blood poisoning, discovered insulin, introduced the medical scanner, and founded the British Army Medical Corps. In 1949, the Nobel Peace Prize was awarded to Lord John Boyd Orr of Brechin, director of the university's Rowett Research Institute and professor of agriculture, organizer and director general of the United Nations Food and Agricultural Organization, president of the National Peace Council and the World Union of Peace Organizations.

The university is still centered about its old colleges and their architectural splendors. Marischal College, with its perpendicular facade, has been called the finest granite building in the world. King's College still retains its beautiful sixteenth-century chapel with crown tower hard by the old Cathedral, its lovely quadrangle, and its old Senator's Room and fine library.

Growth in recent years has centered around the King's College site, where there has been ample room for expansion. The spacious Old Aberdeen campus of King's College, once limited to the arts and divinity faculties, is now

home to most departments. Here are the modern chemistry and physics buildings, the Queen Mother Library, science library, language laboratories, agricultural building, natural history building, refectories, residences, and gymnasium. Marischal College in the city center is today primarily devoted to administration. Today King's College and Marischal College have little identity except as the names of groups of buildings. Other university units include the clinical medical facilities centered at Foresthill, the athletic facilities at Seaton Park, and the Culterty Field Station, an internationally known center for teaching and research in animal ecology adjacent to the Forvie National Nature Reserve.

The university has shown tremendous expansion in the past 50 years. Between 1860 and 1955, the university graduated a total of 5,739 students, of whom 1,336 were women. In 1964, the student population had grown to 2,520, of whom 897 were women. Today British universities have embraced the concept of mass education, and Aberdeen now numbers over 10,500 students in undergraduate and postgraduate studies in four faculties that encompass 28 departments. The faculties are: arts and divinity; medicine and medical sciences; science and engineering; and social sciences and law.

Many Aberdeen graduates will have to find employment outside Scotland and even outside Britain. This has

always been assumed. Scots regard themselves as a migratory race. The view that highly trained individuals are likely to leave Scotland to seek employment elsewhere is almost part of Scottish folklore.

Today the university is a forward-looking institution whose quality of education is strong. Aberdeen enters its sixth century, reflecting on its history, but more intent on developing and modifying the university to meet the needs of a changing world with a technological future. The university's dedication to this vision is shown by a particular emphasis given research and education in medicine, the sciences, and technology.

Further Reading: The following books cover different periods of Aberdeen's long history: John D. Hargreaves, editor, *Aberdeen University, 1845–1981: Regional Roles and National Needs* (Aberdeen: University of Aberdeen, 1989); John Malcolm Bulloch, *A History of the University of Aberdeen, 1495–1895* (London: Hodder and Stoughton, 1895); and Roger L. Emerson, *Professors, Patronage and Politics: The Aberdeen Universities in the Eighteenth Century* (Aberdeen: University of Aberdeen, 1992).

—Edward S. Margerum

UNIVERSITY OF AIX-MARSEILLE

(Marseille and Aix-en-Provence, France)

Location: The university has several campuses in Marseille, from the old central part of Marseille to outlying suburban territory. The research facility for geoscience and environmental studies is at the Technopole de l'Arbois campus north of Marseille. Aix-en-Provence is just northeast of Marseille.

Description: Three state institutions operated under the jurisdiction of the Minister of Education and financed by the state, offering undergraduate, graduate, and professional degrees.

Information: Université de Provence (University of Aix-Marseille I)
3, Place Victor Hugo
13331 Marseille Cedex 03
France
(91) 95-90-71

Université de la Méditerranée (University of Aix-Marseille II)
Jardin du Pharo
58, Boulevard Charles Livon
13284 Marseille Cedex 07
France
(91) 39-65-00
Fax (91) 31-31-36

Université de Droit d'Economie et des Sciences d'Aix-Marseilles (University of Aix-Marseille III)
3, Avenue Robert Schuman
13268 Aix-en-Provence Cedex
France
(42) 20-19-05

The educational heritage of the cities of Aix and Marseille is very old and is reflective of the Mediterranean heritage of the area. For over 2,000 years, educational institutions have continuously existed in the two cities. These schools have been the epitome of the educational state of the art for each era. Today, three modern universities exist in Aix and Marseille; they developed as a result of the changing needs of society and continue to meet the needs of the future. Although the goal today is to prepare students for the complex and technical modern world, their roots may be found in Greek schools and a medieval university.

Five centuries before Christ, Greek colonists founded the city of Phoea at the present site of Marseille. The schools established in the city continued to grow and flourish after the Roman conquest of the area. Aix, founded four centuries after Marseille, and located just to the northeast, became the capital of the Roman province of *Gallia Narbonensis Secunda*, the earliest center of Roman culture in Gaul, and its last refuge after Rome's fall. The region itself became known as Provence, from latin for the word "province." As a population and governmental center, Aix was also an important center of Roman education.

The Roman schools in Aix continued long after the Romans themselves were gone. The cathedral school at Aix, usually intended solely for the training of clergy, grew out of the earlier institutions. As a result, the syndics of the city of Aix retained a voice in appointing the *scholastics* who actually presided over the school, giving the school more secular atmosphere than usual. Some writers have referred to the school in Aix as a "university" before 1400, but the school itself appears to have been limited in scope and authority. The only example found of a law degree granted at Aix before 1400 (in 1302) seems to have been an exceptional event and was apparently done for political reasons.

Political and secular needs led to the founding of a real university in Aix. By the late fourteenth century, rulers required for educated administrators and judicial officials to handle the increasingly complicated affairs of state. At the same time, secular rulers were increasingly anxious to assert their power over religious authorities in their dominions, by means of schools which were not intended mostly for educating clergy. For these reasons in 1409, Louis II, King of Jerusalem and Sicily and Count of Provence, established a *studium generale* in his capital of Aix. The new school drew upon and grew out of the earlier cathedral school and included the traditional university's faculties of theology, law, and medicine.

The new school had to be recognized by papal bull to formally attain the status of university. Alexander V, just named pope by the Council of Pisa and in the shadow of the Great Schism, was anxious to secure his own position with the aid of a powerful ally such as Louis. Upon petition by Louis, the Pope issued a bull recognizing the University of Provence with all the faculties and privileges granted to earlier universities at Paris and Toulouse, and allowing it to grant degrees. To insure the new university's success, Louis decreed that all university students from Provence had to study at Aix or their degrees would not be recognized.

The letters patent for the university were issued in 1413, and established the government of the university. The archbishop of Aix was made the first chancellor of the university for the remainder of his life. Upon his death, a new chancellor was elected by the rector, masters, and licentiates—an unusual arrangement not repeated at any other French university. The rector was to be a “simple student,” who had unlimited civil and criminal jurisdiction in all cases where one party was a doctor or scholar of the university. Those dissatisfied with the rector’s decisions could appeal to a *doctor legens*. Eleven *consilarii* assisted the rector, being elected annually by their predecessors. These men represented all three faculties, but were elected from among the students. The constitution was of a student-university; and the instructors had no great authority except in conferring degrees.

The Duchy of Provence was acquired by France in 1487. The continued existence of the University of Provence was confirmed by Louis XII, and Aix continued to be an important provincial center. It was, for example, the seat of a provincial parlement from 1501 to 1789, no doubt aided by the presence of the law faculty.

In 1603, Henry IV, created the *College Royal de Bourbon* in Aix for the study of belles lettres and philosophy, complementing the traditional faculties of the university, but not officially a part of it. This *college de plain exercise* became an important seat of learning, under the control of the Jesuit order. During the sixteenth and seventeenth centuries, the college served most often as a preparatory, but unaffiliated, school for the university. Only the university could grant degrees in theology, law, and medicine; but candidates for degrees had first to pass an examination in philosophy, which was only offered by the college. Universities often accepted only candidates who had studied in colleges legally affiliated with them, which in practice, required both college and university to be located in the same city. In 1762, the Jesuits were expelled from France, and in 1764, the *College Royal de Bourbon* was formally affiliated with the University of Provence as a faculty of arts.

The addition of the *College Royal de Bourbon* broadened the scope of courses offered at the University of Provence. Formal instruction in the French language was first offered at the college, with texts and a structured course of study. Physics later became a part of the curriculum at the college as a part of the philosophy course in the 1700s. Equipment for conducting experiments was purchased and the first course in experimental physics was offered at Aix in 1741. Newtonian physics, however, was only taught after 1755, when the physicist Paulian offered his first class and Newton’s *Principia* and commentaries were purchased for the library.

The French Revolution, with its emphasis on the individual and an end to inherited privilege, saw the suppression of the universities. To the revolutionaries,

universities represented bastions of corporatism and established interests. In addition, lands possessed by the universities and used for their support, represented a source of wealth to be tapped by the revolutionary government, just as property owned by the Church had been confiscated. In 1792, the University of Provence, along with 21 other universities, was dissolved. Specialized *ecoles*, with rigorous entrance examinations and open to anyone with talent, were eventually established to provide professional training in specialized areas. Even so, the government found it necessary to allow the faculties of law and medicine to continue in Aix and Marseille in the early 1800s.

Throughout the nineteenth century, additional faculties were established in Aix and Marseille to serve the changing needs of French society. For example, Hippolyte Fortoul, later Napoléon III’s Minister of Education, was the first dean and professor of a new faculty in French literature created in Aix-en-Provence in the 1840s. In 1896, the departmental council of the Bouches du Rhone founded a chair in the faculty of letters at Aix in the language and literature of Mediterranean Europe; their purpose was to assist the commercial exploitation of the region by French business. A new science faculty was established in Marseille to assist in the growing industrialization of the region. At about the same time, a special training program was established in the faculty of medicine to train doctors in colonial medicine for France’s expanding colonial empire.

The most important development for the university in the nineteenth century, however, was the reestablishment of French universities in 1896. Facing competition from prestigious German universities following the Franco-Prussian War, French legislators were anxious to have their own universities. In 1896, a law was passed, establishing 17 autonomous regional universities financed largely by the state. The various faculties in Aix and Marseille were grouped into the new University of Aix-Marseille.

Through two world wars and a depression, the University of Aix-Marseille continued to grow. Increasing numbers of women and foreign students joined the student body, and a majority of students majored in the science, medicine, and law faculties. By the late 1960s, however, many students were gripped with a growing sense of the universities as cold, sterile places, which turned out graduates unlikely to get jobs. Individual faculties were nearly autonomous from university administration and the Ministry of Education often intervened directly among the faculties. Following riots among university students in Paris in 1968, a reform of French education took place. The *Loi d’Orientation de l’Enseignement Supérieur* of 1968 divided the old faculties into smaller subject departments, reduced the power of the Ministry of Education, and established smaller universities, with strengthened administrations. In line with this, the University of Aix-

Marseille was divided into two institutions. Each university has differing areas of concentration of study and the faculties are divided as follows:

Aix-Marseille I: history; letters; psychology; sociology and ethnology; philosophy; mathematics; physics; chemistry; natural sciences; Anglo-American, Oriental, Slavonic, Romance, and Germanic languages; literature; and civilization.

Aix-Marseille II: economic science, geography, technology, medicine, pharmacy, dental surgery, tropical medicine, physical education, and oceanic sciences.

Aix-Marseille III: law, political science, applied economics, math and computer science, earth science, ecology, and technological studies.

Like all French universities, the three modern universities are administered by three elected boards, composed of elected representatives of the university community and appointed members from outside academia. The first is the board of administration (*Conseil d'Administration*), which determines general policy for the university, votes the budget, and approves programs and degrees. The second board is the scientific board (*Conseil Scientifiques*), which oversees research and teaching practices in the university. The final board is the board of studies and university life (*Conseil des Études et de la Vie Universitaire*), which advises the board of administration on issues and is concerned primarily with student life in all aspects, such as the library, medical care, and sports. All three boards jointly elect a president every five years from among the faculty of the university. The president represents the university in all official acts, administers university property, and hires all university personnel. He or she is also chair of all three boards and is responsible for law and order within the university.

In response to the increasingly technical nature of the world, the universities established the "Technopole de

L'Arbois," an industrial and scientific park devoted to advances in the sciences. The site consists of 10,000 acres of land situated between Aix and Marseille. Access is easy from the International Airport of Marseille-Provence and a high speed train station is planned for the site. Backers hope the center will develop into a real partnership between university and industry to create the technology of the future.

The University of Aix-Marseille, in all its past manifestations and in all its present forms, has been a source of education and learning for the society which produced it. The emphasis has differed at various times, but the institutions, which have existed continuously for over 2,000 years, have strived to meet the needs which have arisen. Today, the three modern universities, with their different concentrations of study, provide education for the increasingly complex and technical Mediterranean world around it.

Further Reading: Hasting Rashdall's *The Universities of Europe in the Middle Ages* (Oxford: Clarendon Press, 1936) is the best starting point for information specific to the founding and early years of the University of Provence. A more modern complement, both in coverage and in publication date is *A History of the University in Europe* (Cambridge: Cambridge University Press, 1992). Other useful works that describe the French university system, with helpful information about the University of Aix-Marseille include L.W.B. Brockliss, *French Higher Education in the Seventeenth and Eighteenth Centuries: A Cultural History* (Oxford: Clarendon Press, 1987); George Weits, *The Emergence of Modern Universities in France, 1863–1914* (Princeton, New Jersey: Princeton University Press, 1983); and R.D. Anderson, *Education in France 1848–1870* (Oxford: Clarendon Press, 1975). The best source of information about the modern universities in Aix and Marseille, however, is through the Internet, using the universities' home pages: <http://newsup.univ-mrs.fr/> (Université de Provence); <http://www.univ-aix.fr/> (Université de la Méditerranée); and <http://www.u-3mrs.fr/uIII/> (Université de Droit d'Economie et des Sciences d'Aix-Marseille).

—Tim J. Watts

UNIVERSITY OF ALCALÁ DE HENARES

(Alcalá De Henares, Spain)

Location: Central Alcalá de Henares, Spain, 20 miles east of Madrid.

Description: An important university from the sixteenth to the eighteenth centuries, once attended by as many as 12,000 students and rivaling the University of Salamanca in importance. The university was transferred to Madrid in 1836 and restored to Alcalá de Henares in 1977.

Information: Universidad de Alcalá de Henares
Plaza de San Diego, s/n
28801 Alcalá de Henares
Spain
885 40 00

Visiting: Visits to the university and its historic sites can be arranged through the municipal tourism office in Alcalá de Henares.
Oficina Municipal de Turismo
Callejón de Santa María, 1
28801 Alcalá de Henares
Spain
889 26 94

The University of Alcalá de Henares has a long and impressive history, although the current institution bears little resemblance to the one that flourished for several centuries beginning in the early sixteenth century. The history of the city itself is closely tied to that of the university, and the one cannot be examined without the other. While the city's history is tied primarily to the university, Alcalá is also known as the birthplace of Catherine of Aragon, Queen of England, and Miguel de Cervantes, author of *Don Quixote de la Mancha*. Cervantes is the city's favorite son, and the central square is named in his honor. In addition, tradition holds that Christopher Columbus visited Alcalá to propose his expedition to Queen Isabel, and many argue that he returned to the halls of the university to report on his findings.

The history of the site itself goes back at least to Roman times when an important city developed in the Henares Valley at the confluence of two rivers, thus the early name *Complutum*. The alluvial soils in the area are very fertile and the land has long supported considerable agricultural production. Archeological remains from the area include a number of well-preserved mosaic floors, as well as ceramics, from this early period. The area later came under the control of the Moors, and from them the

town gets the name *Alcalá*, or "the castle." Many other towns in Spain share this name, thus the addition of the name of the river valley, Henares.

It was in Alcalá on May 20, 1293, that Sancho IV, King of Castille, signed the documents that founded an *estudio general*, the earliest known educational institution to have existed in Alcalá de Henares, and a precursor to the modern university. Why Sancho would select this site, one with no tradition of educational activity, is an interesting question which some have attempted to answer based on some fabulous stories concerning the area. One history recounts how, in 711, the fabled table of Solomon, an immense green table with 365 legs, was found there. Like the fabled Ark of the Covenant, the table was thought to have been lost somewhere in the east. How it could have arrived in the Henares Valley is a mystery. The purported rediscovery of Solomon's table is said to have led to the construction of both a palace and a church at Alcalá by Don Rodrigo. This fantastic history and the rather spurious attachment to Solomon, a man of great wisdom, may have led Sancho to found the *estudio general* in Alcalá. A more probable explanation may be that the growing prestige of the university at Salamanca led Sancho to seek to establish an institution to rival it. Whatever the inspiration for Sancho, the creation of the school was ratified by the Archbishop of Toledo, Gonzalo García Gudiel. The institution benefited further from grants of land from the popes of the Catholic church, and it continued to grow and prosper into the fifteenth century. Unfortunately, the history of this early educational institution is essentially lost; not until the late 1400s does the history of the modern university begin to appear.

The dates associated with the foundation of the university vary greatly in historical accounts, as do the names of the principals involved. However, some dates are certain, and key individuals are well known. It was around 1495 that Cardinal Cisneros proposed transforming the *estudio general* into a university, and on April 13, 1499, Pope Alexander IV issued a papal bull conceding the transformation. The first students began studying at the university in 1508. In 1512 King Ferdinand recognized the university and granted his patronage.

Cardinal Cisneros had a vision for a university that would take as its principal mission the study of religion and the training of clergymen. He envisioned a reorganization of theological studies at the university. It did not take long for the university to establish its reputation in the area of religious studies, as well as in the study of languages and letters. Among the high points in the uni-

versity's history is the publication, circa 1517, of the famous Polyglot Bible or *Biblia Complutensis*, which contained parallel texts in Hebrew, Latin, Greek, and Chaldean. The undertaking was very expensive, and only 600 copies were ever printed. Of those 600, only 3 were printed on velum. One of those copies can still be seen in Alcalá today. Modern biblical critics do not regard the text very highly and, in a sad turn of events, the original manuscripts no longer exist. Tradition holds that these manuscripts, along with other important documents, were sold by a university librarian to a fireworks maker to be used in the construction of rocket cases. It seems that the space they took up in the archives was needed for other purposes.

The university of Alcalá de Henares is also known for the contribution its scholars made at the Council of Trent. Among its well-known alumni are counted Saint Ignatius of Loyola and Saint Thomas of Villeneuve.

In 1687 King Carlos II granted Alcalá the title of town, a distinction won in large measure because of the importance of the university. At its height the city boasted 38 churches, 21 convents, and 27 religious centers. During this period the university is believed to have grown to an enrollment of as many as 12,000 students. By the time Alcalá was granted the title of town, the university campus was well established, based on the carefully laid-out plans of Cisneros and his assistants.

Throughout the eighteenth century the university suffered a decline which corresponded to the loss of Spanish power and prestige throughout the world. Enrollments declined, and the stature of the faculty also suffered. The growth in importance and prestige of neighboring Madrid also led to a diminished position for Alcalá de Henares. These factors led to the transfer of the university to Madrid in 1836. The city of Alcalá de Henares suffered a serious decline thereafter. The decline of the town appears to have been so complete that, by as early as 1845, one handbook for travelers to Spain refers to Alcalá as "a poor and ignorant place; for the removal of the university to Madrid has completed its ruin, and, like Salamanca, it is a shadow of the past." The worst, however, was yet to come. The depth of Alcalá's decline came some years later, during the Spanish Civil War, when many of its architectural treasures were destroyed. Then nearly all of its religious structures were destroyed during the period from 1931–39, but many of the structures associated with the university survived. During the 1940s and 1950s the town was little more than a stopping point between Madrid and Guadalajara, but during the 1960s Alcalá began to benefit from the growth of the industrial sector and the spread of Madrid—Alcalá has now become essentially a suburb of the city.

In 1977 a royal decree restored the university and it now houses colleges of medicine and pharmacy as well as a polytechnical school and the Juan Carlos I botanical

gardens. The re-established university also has a center in Guadalajara, including its summer language course in Spanish for foreigners.

While the university is no longer the prestigious institution it once was, many people visit Alcalá for its historical significance. The most important remaining sites in the city are associated with the university as it was planned by Cardinal Cisneros. The university was laid out in a careful pattern with two long perpendicular roads radiating from the central square. One road was planned to house the colleges and the other the book-dealers. Under the direction of architect Pedro Gumiel the major buildings of the university were constructed very quickly during the first half of the sixteenth century. Perhaps the most important building on campus is the Colegio Mayor de San Idelfonso (Saint Idelfonso's Residence Hall). Begun in 1537 and completed in 1553, the building has a distinct *mudéjar* style, drawing from the Moorish tradition. Especially noteworthy is the building's facade which is a fine example of Spanish plateresque. Rodrigo Gil de Hontañón, the architect of the Colegio Mayor de San Idelfonso, is also renowned for his work on the cathedrals in Salamanca and Segovia. Another important structural element at the site is the intricate and detailed ironwork of the building's grills.

Other structures of note include two residence cloisters, an assembly hall, and a chapel. Of these, the chapel is the most interesting. It contains striking elements of gothic, *mudéjar*, and Renaissance elements, including a coffered ceiling and interlacing arches. It has been termed one of the finest examples of the early Spanish Renaissance style. Many original elements from the building, including the altarpiece and the choir stalls, which disappeared after the university was moved to Madrid, have now been replaced. Cisneros's Tomb, the final resting place of the cardinal, is one of the focal points of the chapel. Its iconography is a unique mix of religious and secular, including the church fathers and allegories of the liberal arts. It is a fitting tribute to this Christian humanist and founder of the university.

Numerous other buildings erected during the sixteenth and seventeenth centuries were originally convents and colleges which were eventually annexed to the university. Among these are Saint Catherine's College, Saint Peter and Saint Paul's College, and King's College. Considerable restoration work has been done on these structures and most are open to the public, although many now house government and private offices.

Among the most important of the local buildings outside the university is the Palace of the Archbishops of Toledo. The structure was completed around 1534 and houses the archives of the kingdom. Among its most interesting exhibits are the Polyglot Bible and the constitution of the university. In addition to its archives, the building also houses a small archeological museum.

The glory of both the university and the city of Alcalá de Henares are long past, and only a flavor of those

times remains today. However, the influence of this once-great institution can be seen in everything from Catholic church doctrine to the first universities in the Americas.

Further Reading: Most of the histories that deal extensively with this university and its history are available only in Spanish although it is discussed at least briefly in most major English-language travel guides. Even in the works in Spanish, this site and the university generally merit only a few paragraphs. Peter Lineham's *History and the Historians of Medi-*

eval Spain (Oxford: Clarendon Press, 1993) contains a nice treatment of the founding of the university and the historical figures involved. A number of informational guides published by the Ayuntamiento de Alcalá de Henares are useful, especially one on patrimony and history and another on culture. The text in these publications is in Spanish, French, and English. The university itself has also published a number of pamphlets, maps, and guides discussing both the history of the university and its current status and configuration.

—Michael D. Phillips

UNIVERSITY OF ARIZONA

(Tucson, Arizona, U.S.A.)

Location:	Tucson, Arizona, surrounded by the Santa Catalina Mountains and the Sonora desert.
Description:	A state university enrolling over 32,000 students in undergraduate, graduate, and professional schools.
Information:	Registrar and Director of Admissions University of Arizona Tucson, AZ 85721 U.S.A. (602) 621-3237 (undergraduate) (602) 621-3132 (graduate)
Visiting:	Student Services provides information and campus tours from the Visitor Center. Information desks are located on the main floor of the Student Union Building.

When the Territory of Arizona was created in 1863, its legislature immediately began discussing a public educational institution. John N. Goodwin addressed the body on this topic, proclaiming that "self-government and education are inseparable. . . . The common school, high school, and the University should all be established and are worthy of our fostering care." In 1864, the creation of a territorial university was formally proposed and its constitution was written, a board of regents was established, and income from the sale of public lands was provided. Soon, however, the uncertainties of life in Arizona brought progress to a halt; Regent Gilbert W. Hopkins was killed by Apaches, an event which illustrated the more pressing concerns of the territory's settlers.

Plans for the university were put on hold until 1885. At this time, with the Apache wars drawing to an end, the legislature was ready to put in place its territorial institutions: the capital, an insane asylum, the state prison, a university, and a teachers' college. Tucson, which had been the capital from 1867 to 1879, was now competing with other communities for this status; the asylum and prison, with their appropriations, were also considered plums. The university, however, was looked on skeptically and many Tucson residents shared the sentiments of a bartender who sneered "What do we want with a university? What good will it do us? Who ever heard of a University Professor buying a drink?" Other practical concerns also made the idea of a university seem slightly

ridiculous. Who would attend a university when there was not one high school in the territory?

Nevertheless, the legislative assembly passed a bill appropriating \$25,000 for the school, stipulating that 40 acres of land must be secured for its location by the end of the year. It appeared that the funds would indeed lapse, when no offer of land was forthcoming. Only Jacob S. Mansfield, a Prussian-born merchant and a member of the board of regents, showed an interest in promoting the university's cause. Mansfield believed that the university would be beneficial to Tucson's development and proceeded to search for a potential location. In May 1886, he selected a site east of town, a piece of land owned by E.C. Gifford, Ben C. Parker, and William S. Read (who would become identified as gamblers and a saloon-keeper in university legend). It took Mansfield months to convince the men to donate the land to the board of regents, but they finally did so on November 27, 1886.

One year later ground was broken for the first university building. Soon the course of events hit another snag, as the regents ran out of money before the building was completed. It took four more years to acquire more funds from the legislature, at which time the building finally received its roof and windows. In 1890 the university was officially ready for business, having created a college of agriculture, a college of mines and engineering, and an agricultural experiment station. The inclusion of agricultural studies had been inspired by the Hatch Act of 1887, which provided an annual \$15,000 grant for any land grant institution that had an experiment station.

When classes began in autumn of 1891, there were 6 professors and 32 students at the University of Arizona. Only nine of the students were of college rank; for the next 35 years the school would have to provide preparatory courses in addition to a college curriculum. Mining and agricultural courses were supplemented by enough liberal arts courses to satisfy degree requirements. Practically all activities were held at the new university building, which became known as Old Main. It provided space for classrooms, laboratories, the library, an assembly hall, as well as living quarters for students and faculty. A Chinese cook was hired to feed the residents.

These modest beginnings set the tone for some years. In 1895 the school's first graduating class numbered just three, two women and one man. For 20 years, the graduating classes did not exceed ten students; degrees were not granted until 1917. In part, the slow growth of the university was following the fortunes of the city of Tucson. By 1920, enrollment had grown to 1,000, while the city's pop-



University of Arizona

ulation reached 20,292. The construction of a new stadium and the creation of a school of music reflected a new optimism about the school's future. Such optimism proved to be short-lived, as the university soon faced the setbacks of the Great Depression, which resulted in staff and salary reductions. University President Homer L. Shantz struggled to fulfill his hopes for a building program and applied for a Public Works Administration grant of \$800,000. Approval of the grant was a boon to the school, which gained a science building, a greenhouse, a women's gymnasium, an auditorium, a classroom building, and a museum; moreover, the city's unemployed were enlisted to complete this work and thereby benefited as well.

By 1939 enrollment had jumped to 3,000 and the University of Arizona had become a respected institution in the southwest. Not only had the university acquired the physical proportions of a legitimate university, it had established an excellent academic reputation in the sciences. In particular, tremendous advances in tree-ring research (dendrochronology) were achieved by faculty member Andrew E. Douglass, an astronomer. His interest in sunspot cycles led him to study tree rings and to develop the basic principles by which they are used to date historical and environmental events. This work led to the creation of the university's Laboratory of Tree-Ring Research in 1937.

Many of the fields of study that have reached the greatest prominence at the University of Arizona benefit from the school's location. The area's clean, clear skies make it a perfect place to study astronomy. A \$60,000 gift from Lavinia Steward in 1916 financed the university's first observatory; ultimately, the growth of the city and its lights led to the relocation of the Steward telescope to the Kitt Peak National Observatory in 1963. Astronomical research facilities also include Flandrau Planetarium, the Lunar and Planetary Laboratory, and a multiple mirror telescope on Mount Hopkins. Construction of the Mount Graham International Observatory commenced in the 1990s with plans to build three new telescopes, including what is expected to be the world's most powerful binocular telescope.

The presence of the well-preserved pueblos of several prehistoric cultures (the Anasazi, Hohokam, Mogollon, and Sinagua) are vital resources in the university's anthropological and archaeological studies. Such work has also been complemented by UA's tree-ring studies, which provided a method for dating the construction materials found in the pueblos and other ancient sites.

Related exhibits are part of the university's natural history museum, the Arizona State Museum, including clay, stone, and bone artifacts from these indigenous cultures and tree-ring specimens that date as far back as A.D. 212.

The Sonoran desert and the Santa Catalina mountain range have facilitated environmental research of arid lands, as well as research in hydrology and mining. Other areas where the university excels are management information systems, optical sciences, and health professions. The College of Medicine is well known for its research relating to heart surgery, cancer, and arthritis.

A gift from alumnus C. Leonard Pfeiffer created the basis for the university's fine art collection. His donation of American works from the 1930s (by Edward Hopper, Stuart David, and Reginald Marsh) have been supplemented by the Kress Collection of paintings from the Renaissance through the seventeenth century, the Gallagher Memorial Collection of paintings by twentieth-century masters (Picasso, Rodin, Arp, Maillol, and Degas), and a large number of bronze and plaster sculptures by Jacques Lipchitz.

The UA campus now encompasses some 300 acres, supplemented by five separate agricultural centers. With more than 138 buildings, mostly made of red brick, it mixes traditional southwestern architecture with modern structures. Old Main, the first university building, has survived the repeated threat of demolition and now provides offices for the dean of students and other support services. The building's safety was assured in 1972, when it was named to the National Register of Historic Places. Seventeen other campus buildings are also on the register.

Further Reading: An early history of the University of Arizona is provided by *Tucson: The Life and Times of an American City* by C.L. Sonnichsen (Norman, Oklahoma: University of Oklahoma Press, 1982) and *A Photographic History of the University of Arizona* by Phyllis Ball (Tucson: University of Arizona Press, 1986). *Arizona: A State Guide*, compiled by Workers of the Writers' Program of the Work Projects Administration in the State of Arizona (New York: Hastings, 1940) and *This Is Tucson: Guidebook to the Old Pueblo* by Peggy Hamilton Lockard (Tucson, Arizona: Pepper, 1988) give details regarding the school's subsequent development and its outstanding programs and facilities.

—Junelle Dupee

UNIVERSITY OF BARCELONA

(Barcelona, Spain)

Location:	Barcelona, in the Catalan region of northeastern Spain.
Description:	State-supported university enrolling approximately 70,000 students.
Information:	University of Barcelona (Universitat de Barcelona) Gran Via de les Corts Catalanes 585 08007 Barcelona Spain

The structure and history of the University of Barcelona have been influenced greatly by the persistent republican spirit of the Catalan region. Catalonia, situated on the northeast corner of the Iberian peninsula, has attempted to establish itself as an autonomous republic, free from the rule of the Spanish state, frequently throughout its history. The university has been affected by the contrasting movements toward Spanish centralization and regional autonomy since its founding in 1450. Freedom and self-government were the same issues that spurred the Spanish student protests that began in Barcelona 500 years later.

Higher education in Barcelona can be traced back to the thirteenth century. Informal academies of learning existed where scholars would convene to discuss topics of interest and importance. The University of Barcelona's immediate predecessor was the autonomous academy of medicine arts (*Estudio de Medicina y Artes*). This school was established in 1401 by Martin I, son of Martin the Humanist. Martin I (1374–1409) was the king of Sicily and prince of Aragon.

The University of Barcelona was founded in 1450 when the school was authorized by King Alfonso V of Aragon (Alfonso the Magnanimous), and confirmed by papal bull. Alfonso (1396–1458) liked to be known as the true renaissance king who promoted scholarship and enlightened activities. He opened literary soirees to the young people of Messina and developed a school in the library of Naples. This institution, opened in 1443, was intended to be "akin to the schools of Florence where youth could imbibe the new literary arts and the spirit of humanism."

The same spirit inspired Alfonso's financial backing of other institutions of higher education in his kingdom. He authorized the schools of Catania (1444), Gerona (1446), and Barcelona (1450). Much of this support was limited to giving his personal sanction and exercising his influ-

ence to secure papal approval so that these local schools could be raised to official university status.

For all his cursory backing of the creation of universities, Alfonso did not encourage his subjects to acquire academic training. The practical experience that men acquired abroad in law, theology, and medicine seemed to be sufficient for the king. Because Alfonso gave no financial or moral support beyond his own sanction and influence with the church, the University of Catania was the only school that actually came into being during his reign.

The University of Barcelona waited another 50 years after its official founding date until it truly began to function. In 1507 the general study, or university (*estudio general* or *universidad*) was created. It was yet another half century until the university was firmly established. The definitive organization of the University of Barcelona took place from 1559 to 1565.

As the Bourbon movement of centralization swept through Spain in the early eighteenth century, the Catalans saw their personal freedoms sharply curtailed, including their access to education. In 1714, Barcelona's three main military and government institutions, which had been in power since the thirteenth century, capitulated to the rule of Felipe V. Although all but one of the members of the replacement government were Catalan, they were merely puppets of the Bourbons.

By September 1714, this new government passed several laws that severely restricted the Catalan's personal and financial freedoms. The very next year, the government disbanded the University of Barcelona and moved it to a small, remote country town, Cervera. The only part of the old university that remained in the city was the grammar school. This was "a minor part of the university, a kind of preparatory school. The scholars and professors—perhaps seen as a threat to the new regime—"could do little harm in that remoteness [of Cervera] except teach and study scholasticism."

The university remained in Cervera for more than 150 years, during the various revolutions and republican battles of the eighteenth and nineteenth centuries. The first national educational reforms, which signaled the beginning of a modern, unified educational system in Spain, took place in the middle of the nineteenth century. The first general education act was passed in 1857. The *Ley Moyano*, named for the minister responsible for it, provided the foundation for a national education system. The centralized, hierarchical, standardized Spanish educational system was based on this law until the late 1960s and early 1970s. Under the law, university education was to be completely under state control, with the



University of Barcelona

Catholic church completely excluded. Although the church had no official control over the educational system after the *Ley Moyano*, it still tried to influence curriculum, particularly in universities. This rift between the church and university professors still persisted in the late twentieth century.

Under the law, the country was divided into ten university districts, with a hierarchy of officials, including a king-appointed rector to oversee all education in each district. The universities' main function was not research but granting a qualification (*titulo*) to professional people. The curriculum was standardized across all universities; technical subjects were excluded.

Although the *Ley Moyano* was passed in 1857, its effects did not reach many universities, including the University of Barcelona, for years. In 1873 the University of Barcelona was officially re-established as part of the centralized, state-controlled educational system. In the same year, the university was moved from Cervera back to the city of Barcelona. Most of the buildings on campus on the Plaza Universidad date from this period.

The structure of the university and its role in the centralized system remained relatively unchanged until the 1930s. In 1931, Frances Marcia declared an autonomous Catalan republic and a new government, the *Generalitat*. Although the *Generalitat* had widespread powers, education remained for the most part under the control of the Spanish government.

The exception was the University of Barcelona, which was made into an autonomous institution in June 1933. The university was governed by a joint council of repre-

sentatives from the *Generalitat* and the Spanish state. Classes would be conducted in either of the two official languages of the republic, Castilian and Catalan. Eighty percent of the students and staff chose Catalan for their classes, indicative of the strong republican spirit of the Catalans.

In the 1950s and 1960s, students all over Spain got caught up in political movements. The University of Barcelona was one of the earliest institutions to experience student unrest. Influenced by the radical theories of doctrines such as Castroism and Neo-Marxism, students began to protest the autocratic rule of the university government. The Spanish University Union (SEU) had been officially in control since 1939, but students felt that they should have more say in the governance of universities. They demanded representative and independent associations that would be democratically administered.

The student turmoil begun in the mid-1950s, with one of the first large uprisings at the University of Barcelona. In 1956, several of the schools of the university were closed for two weeks because of strikes. Throughout the next ten years, there were more strikes, demonstrations, violence, meetings, and police action. The student movement had spread all over Spain by 1965, and it escalated to an extreme level at the University of Barcelona. In April 1966, after two days of student demonstrations and agitation the entire university was temporarily shut down.

Besides the issue of student representation, the sheer number of students was another reason for the uprisings. The sudden and tremendous increase in university enrollment across Spain was not accompanied by a simi-

lar increase in resources. Students may have been protesting the effects of both overcrowding and thinly stretched budgets and staff.

Enrollment in the Barcelona university district jumped from 6,945 to 14,988, an increase of more than 115 percent from 1955 to 1967. To provide for the enormous influx of students, autonomous universities were created in existing districts. In 1968, the Autonomous University of Barcelona was created, along with autonomous institutions in Madrid and Bilbao. These universities competed with existing national universities.

The University of Barcelona has continued to grow at a tremendous rate, particularly in the last 30 years. In the late 1960s, about 4,000 students attended the university. By 1991–92, student enrollment totaled over 69,000.

The university was reorganized again in 1985 under the jurisdiction of the Generalitat of Catalonia. It remains a self-contained institution, financially supported by the Spanish state and the Generalitat. Although there still exists a hierarchy of administrators who govern the university, included among the ruling bodies are representatives of the staff and students. The students' fight for representation apparently has resulted in some changes in the structure of the University of Barcelona. The republican spirit of the Catalans is also reflected in the university today. The Catalan government shares control of the university with the Spanish state, and classes are still conducted in either Catalan or Castilian.

The University of Barcelona cooperates with many other universities all over the world. It participates in exchanges with schools in the United States, Europe, South American, Asia, and Australia. The university's outreach programs include the Andorran Studies Institute, the High Mountains Research Institute, the Inter-University Institute of Ancient Middle Eastern Studies, the Public Health Institute, and the Hispanic Studies Institute.

Further Reading: Although there is no authoritative, comprehensive account of the history of the University of Barcelona, bits and pieces can be found in various sources. John M. McNair's *Education for a Changing Spain* (Manchester: Manchester University Press, 1984) provides an overview of the Spanish educational system and covers the history of Spanish universities in general. Information about student protests of the 1950s and 1960s can be found in Victor Alba's *Catalonia: A Profile* (London: C. Hurst, 1975), which also gives a good description of the region and its republican impulses. Early history of the university is covered briefly in *Eighteenth Century Spain, 1700–1788* by W.N. Hargreaves-Mawdsley (London: Macmillan, 1979), *Alfonso the Magnanimous* by Alan Ryder (Oxford and New York: Oxford University Press, 1990), and the *Enciclopedia de la Cultura Espanola* (1962–68).

—Cindy Mertz

UNIVERSITY OF BORDEAUX

(Bordeaux, France)

Location: In Bordeaux, southwest of Paris, on the west bank of the Garonne River.

Description: Three autonomous, state-financed universities founded in 1970 under France's Orientation Act of 1968, which provided for reform of higher education. They replaced the former University of Bordeaux.

Université de Bordeaux I:

Enrolls approximately 26,000 students in science, physics, chemistry, mathematics and computer science, biology, earth sciences, law and economics, juridical studies, private law and history of institutions, public law and political science, economics and management studies, and general economic and social training.

Université de Bordeaux II:

Enrolls approximately 15,000 students in medical sciences, pharmacy, odontology, tropical medicine, public health, biochemistry and cellular biology, social and psychological sciences, applied human sciences, physical education, and oenology.

Université de Bordeaux III (Université Michel de Montaigne):

Enrolls approximately 17,000 students in letters and arts, philosophy, history, geography, language, literature and civilization of anglophone countries, foreign languages, Germanic studies, Iberian and Latin American studies, information and communication sciences, science, communications, and technology development and natural resources.

Information: University of Bordeaux I
351 cours de la Liberation
33405 Talence Cedex
France
(56) 80-84-50

University of Bordeaux II
146 rue Leo Saignat
33076 Bordeaux Cedex
France
(56) 57-10-10

University of Bordeaux III
Esplanade Michel de Montaigne
Domaine Universitaire
33405 Talence Cedex
France

The University of Bordeaux was established during the fifteenth century when the English dominated France. Situated in the department of Gironde, in southwest France at the mouth of the Garonne River, the university was modeled after the *studium* existing in Toulouse. (*ad instar Studii Tolosani*). The University of Bordeaux was founded by a papal bull in 1441 but did not receive a direct royal confirmation until the reign of Louis XI in 1443.

Over the next four centuries, the university managed to survive tumultuous uprisings in the region, including those in the town of Bordeaux. To appreciate an institution's beginning struggles, subsequent improvements, and future goals, one needs to survey the area's unique development.

"Take Versailles, add Antwerp, and you have Bordeaux," is the way Victor Hugo described the city. He was impressed by the beauty of its tidal river as well as its eighteenth-century magnificence. In reality, Bordeaux played a major role in France long before anyone heard of Versailles.

Bordeaux's position on the Garonne was definitely a factor in its popularity as an important port. From the center of the estuary, Gironde, several streams ran north to the River Dordogne or south to the River Garonne. Dating back to some 300 years B.C., it was a small Celtic port, trading with the Phoenicians who brought tin from mines in Cornwall. Later, under Roman occupation, Bordeaux (known as *Burdigala* by the Romans) produced its first wine. This led to the beginning of a thriving wine region and was instrumental in Bordeaux becoming a popular commercial city.

Ausonius, a writer and native of fourth-century Bordeaux, describes it as "four-square and surrounded with walls and lofty towers, and celebrates its importance as one of the greatest educational centres of Gaul."

In 1137, Bordeaux's St. Andrew's Cathedral was the stage for a royal wedding. Eleanor, the oldest daughter of William X, Duke of Aquitaine, was to wed the French king's son, the future Louis VII. Eleanor's dowry, as heir-ess of Aquitaine, was opulent, encompassing nearly all southwestern France. Throughout their troubled 15-year marriage, the distinguished statesman Abbot Suger of St. Denis, attempted to restore harmony between them by suggesting policies to extend the domain. All good will was in vain, and in 1152, the marriage was annulled by the Council of Beaugency.

Eleanor regained her dowry and within two months married Henry Plantagenet (ten years her junior) Duke of Normandy, Count of Anjou. Henry inherited the English crown two years later, becoming Henry II of England. He

and Eleanor reigned over southwest and central France, as well as England.

Bordeaux's prosperity was enhanced by this union, due to increased commerce with London; yet discord between England and France ensued and lasted for three centuries. The opposition which began with their marriage ended in 1453, at the Battle of Castillon, marking the last battle of the Hundred Years' War and the end of English domination.

In 1441, prior to the end of the Hundred Years' War, the University of Bordeaux was founded by a papal bull of Eugenius IV upon the petition of Archbishop Pey-Berland (1375–1458) an important spiritual and political leader, together with the seneschal and Aquitanian councillors of the English King Henry VI, and of the mayor and jurats of the city. Two years later it received royal confirmation. The foundation of the university was mostly the work of the municipality and was governed primarily by the masters. The only recognized student rights were in the enactment, which required that "two of the rector's four councillors should be bachelors." The archbishop of Bordeaux was named chancellor; upon his death, the chancellorship would pass to the archdeacon of Médoc. Apostolical conservators were the bishop of Bazas, the abbot of La Sauve, and archdeacon of Cernes. The preservation of royal privileges was delegated to the seneschal of Guienne (Aquitaine).

Under the University of Bordeaux's first statutes, dated 1443, there were four schools: theology, canon law, civil law, grammar and arts. The faculty of arts incorporated the existing college of arts and the town-school. Medical training was entrusted by the city to the Collège des Médecins (college of physicians). This medical college began in 1411. The new university was not able to change established customs until 1472, when letters from Louis XI imposed statutes, similar to those of Toulouse, stipulating medical education be dispensed by a university faculty and not practicing physicians. When a regent in medicine was established in 1491, the University of Bordeaux was complete.

None of the chairs was endowed, though the right of teaching was limited to their occupants; the professors were left to be supported by a fee of half a golden noble from each scholar. The prelates, nobles, and sons of doctors and masters were commonly excused from examination. During the sixteenth and seventeenth centuries the university was reduced to little more than an establishment for the sale of degrees.

The city, which continued to grow, saw a decline in its commercial life when English domination ceased. Streets were crowded and dirty and surrounding marshes became unsanitary. In 1585, there was an outbreak of plague. The mayor of Bordeaux, Montaigne, a well-known essayist who succeeded in pacifying rival religious factions in the area, fared poorly during this phase and preferred to seclude himself in his castle in

the country. No improvements were made to the city until the eighteenth century.

Claude Boucher, governor of Bordeaux from 1720 to 1743, had the vision and vigor to demolish the city's worst parts and begin rebuilding. Fortunately for Bordeaux, Boucher's fear of expanding vineyards did not ever succeed in passing a law obliging owners to uproot their vines. One famous French jurist and political philosopher, Charles Louis de Secondat, Baron de la Brède, known as Montesquieu, was not only a vineyard owner but president of the parliament of Bordeaux. Montesquieu's influence was instrumental in saving the prosperity of Bordeaux, which was built on wine.

Montesquieu (1689–1755), born in La Brède, near Bordeaux, returned to study law at Bordeaux University after studying in schools near Paris. He received his law degree at age 19 and went on to become a magistrate as well as president of the Bordeaux Parliament. He held his presidency for 12 years, taking part in the proceedings of the Bordeaux Academy, where he contributed papers on philosophy, politics, and natural science.

The work started by Claude Boucher was continued by Louis Urbain Aubert, Marquis de Tourny, governor from 1743 to 1757. He brought light and air into the city by creating spacious squares and wide avenues. During this rebuilding period Bordeaux was given a magnificent facade along the river as well as public gardens. During the second half of the eighteenth century Bordeaux became the most important port in France, with a lucrative trade in sugar and slaves with the West Indies, in addition to its wine exports. Such affluence brought more improvements to the city until 1789, when the Revolution brought the golden age to an end. Blockades, during the Napoléonic Wars, hurt the city's economy and it was not until the mid-eighteen hundreds that recovery began.

During the nineteenth century, work on one of the poorest departments in France, the Landes (south of Bordeaux in Aquitaine), was continued. Pine forests were planted on barren land and sand dunes secured. To eliminate unhealthy swamps, drainage methods were installed and forests extended. Landes became one of the richest departments from the export of wood and resin. Bordeaux, being the nearest city, increased its economic importance and continued to grow.

Prior to World War II, Bordeaux became so depressed that many wine estates were sold. Nearly every year in the 1930s was bad for Bordeaux wine, which was still its most important commercial element. It was not until the war ended and a new mayor, Jacques Chaban Delmas, took leadership that new industries arose. In addition to wine, the city attracted space and aviation industries, electronic and automobile plants as well as clothing, food, construction, medical goods, and paper-making factories.

After World War II, French educational institutions were out of step with the needs of a technological society. Provencal universities, including Bordeaux, were

biased toward classics, emphasizing mathematics, Greek, Latin, and French philology, literature, and history. Science and technology were treated as less important. University systems remained much the same as when Napoléon conceived them.

In the early 1950s, France became aware of higher education's shortcomings. During Charles de Gaulle's regime, efforts to reform the education system began. He had two initiatives: the first was to change the curriculum, putting emphasis on postwar needs, focusing on science and technology; the second was encouraging students to attend provincial universities, thus de-emphasizing Paris. If successful he believed that these initiatives would position France as a modern nation in the new world order. During the period between 1956–57 and 1972, enrollment in higher education grew from 150,000 to nearly 700,000. While provincial universities, such as Bordeaux, managed to increase enrollment, Paris also continued to grow.

Student uprisings in 1968 forced changes to the university system, including replacing the *facultés* with *unités d'enseignement et de recherche*, or units of teaching and research (UER). Eventually, UERs were distributed among new institutions, including 43 universities in the provinces. Small city universities represented a unification of traditional *facultés*. Larger cities such as Bordeaux had the university divided into three parts.

President Georges Pompidou followed Charles de Gaulle and continued rebuilding the university system. Pompidou appointed Edgar Faure to continue France's rebuilding process. Faure, a minister of education under de Gaulle, passed a set of reforms authorizing political activity on campuses, streamlining both faculties and examination systems and providing student-faculty committees. The "Faure law" allowed considerable voice to students and faculty in the administration of individual universities.

In the early 1980s, Alice Saunier-Selte, minister of universities, enforced a decision to cut back graduate degree programs at the nation's 76 universities. Quite abruptly, 30 percent of all master's and doctoral degree programs, mostly in humanities and social sciences, were eliminated. Saunier-Selte felt this initiative was an

efficient way to end curriculum duplication and to restrict graduate education to major university centers such as Paris, Bordeaux, Grenoble, Lille, Lyon, Nancy, and Strasbourg. She hoped these would become "poles of excellence."

Throughout the turmoil, the universities at Bordeaux have grown and prospered. The three universities founded under France's Orientation Act of 1968 now have nearly 60,000 students.

Université de Bordeaux III (Université Michel de Montaigne) has an enrollment of nearly 17,000 students. Bordeaux III most closely resembles the traditional French university. The curriculum is primarily classic in orientation, including letters and arts, philosophy, history, languages, and communications.

Université de Bordeaux II was established to give the region a medical university. Bordeaux II has an enrollment of approximately 15,000 students. Studies include medical sciences, pharmacy, public health, chemistry, biology, social sciences, and a regional institute of physical education. This university fills a historic void for the region.

Université de Bordeaux I, largest of the schools, enrolls nearly 26,000 students. This school focuses on the curriculum identified in the 1950s as critical to maintain France's competitiveness in the post-World War II environment. The university specializes in the sciences (physics, chemistry, biology, and earth science) as well as computer science, political science, and economics.

In an effort to meet the needs of the twenty-first century, France adopted, in May 1991, a plan called *Université 2000*. Its objectives are to admit more students and improve standards, to contribute to regional development, and to prepare for increasing competition and for entry into the European Community. As the twentieth century draws to a close, Bordeaux continues to extend its scope and activities, building and developing into a university that meets the needs of the region and France.

—Sandy Gladfelter

UNIVERSITY OF BUENOS AIRES

(Buenos Aires, Argentina)

Location:	On a widespread campus in the capital of Argentina.
Description:	A public university; enrollment in 1994 was 174,345.
Information:	Secretaría de Extensión Universitaria y Bienestar Estudiantil (Licenciado Martín Marcos) Avenida Corrientes 2038 Buenos Aires Argentina (1) 953-0390

The University of Buenos Aires (UBA) was created in 1821 during the Argentinian independence period, when Argentina aspired to leave behind its colonial history and become a “civilized nation.” Though Spain provided the model for Latin America’s colonial universities, France was the main inspiration for the newly independent nations and their establishment of secular universities freed from Church influence. Thus, UBA was an heir of the French Revolution more than Argentina’s own theologically oriented colonial University of Córdoba. And so the UBA emerged as a major antagonist in the liberal-conservative conflicts that marked much of Argentine politics in the nineteenth century.

The university’s philosophical studies reflected the influence of French thinkers, such as Destutt de Tracy. Juan Aguero, the first professor for logic, metaphysics, and oratory, cast doubt on the authenticity of the gospels and taught about Jesus Christ as the philosopher of Nazareth, a figure like Plato or Socrates. Rather than a faculty of theology, UBA boasted a faculty of philosophy and humanities, as well as faculties of medical sciences, law and social sciences, mathematics and physics, and natural sciences. The university also controlled the national secondary schools.

The 1880s was a landmark decade for UBA’s institutional identity. Named after an ex-rector and ex-president, the Avellanada law of 1885 established two hallmark principles for all Argentine public universities: autonomy and the absence of tuition. University governance would be entrusted fundamentally to professors. They could select new professors, create syllabuses, and organize the basic academic character and structure of the university. Meanwhile, to this day, students pursue their studies totally free of charge.

In the ensuing decades, changes in the character of the nation brought changes to the university. Argentina’s land-owning oligarchy was yielding to forces of immigration, urbanization, and industrialization, all supported by the vigorous construction of railroads. Argentina enjoyed an unprecedented cultural and scientific opening. Again Europe provided inspiration. The philosophy of positivism gave priority to science and culture as ways to civilize society and achieve progress. The University of Buenos Aires eagerly created research institutes from ethnography to physiology and undertook a series of new practical tasks.

A growing and prosperous country also meant a growing and better endowed university. An expanding student body (from just 602 students in 1886, including those at the secondary level, to 9,352 by 1920) was treated to recreational student centers in various faculties. The first minister for public instruction saw in recreational centers a replica of the English and German student associations that prided themselves on developing morality and national leadership through physical discipline and guided activity. Meanwhile, libraries grew enormously, though laboratories did not develop at an equal pace.

For all the development, however, UBA remained predominantly professional in its orientation and activities. The great majority of the students enrolled between 1885 and 1930 chose the liberal professions, especially law, engineering, and medicine, as their ticket to social and economic (and often political) success. The university basically fostered change within the establishment.

The 1918 reform movement jolted that state of tranquility. This movement would have a major impact not only in Argentina but in much of Latin America. The ire and the triumphs of the young reformists focused on university governance. Co-gobierno would come to mean representation of three key groups—professors, students and graduates—on decision-making bodies (university assembly, high university council, and the faculty or school councils). It would also mean university autonomy, appointment of teaching staff by examination with renewed competition every seven years, easier access to courses, and updated teaching methods.

Reformist notions of expanded participation in university governance again reflected broader tendencies in Argentine politics. The nation had turned away from oligarchic and elitist political ideas, behind President Hipólito Yrigoyen, leader of the Radical Civic Union, as it adopted universal suffrage. This responded to the interests of the rising middle class, and the middle class was taking over the university. The principle of no tuition took

on new meaning and sanctification. Moreover, students assumed a role as voice of the middle class, the nation, and progressive reform. Notions of national identity and anti-imperialism had a prominent place, even as the economy remained heavily involved in the export of agricultural products and supply of raw materials within the international market.

Despite the ferment, it was not until the 1950s that UBA finally abandoned its nearly exclusive professional profile. Academic reform now largely involved incorporation of research into the university's mainstream agenda. This, then, was an effort to move closer to the Humboltian model, and certainly the U.S. universities' mixing of teaching and research was another influence. The new emphasis was not meant to push aside other cherished principles, such as co-gobierno, autonomy, or academic freedom.

Compared to reforms launched in countries like neighboring Brazil, however, Argentine efforts were limited. A key difference was the far greater level of development of Argentine universities, led by UBA. Boasting a proud university tradition, and easily leading Latin America in terms of both total enrollments and percentage of the age cohort enrolled, Argentina was less ready to embrace foreign models. The logic certainly applied to UBA, the region's largest and possibly most prestigious university at the time. Besides, whatever joint efforts would otherwise have flowered were decimated by the political instability and violence that wracked the nation and its universities from the mid-1960s. So when international philanthropy offered up its large-scale projects for university reform Argentina mostly remained on the sidelines. This contrasted with its participation in many smaller but important earlier activities built around individuals and small units; for example, figures like Gino Germani played a role in importing empirical sociology.

The marginalization of large philanthropic projects meant there would be fewer efforts, with less success, on a variety of reforms: blending research with teaching at the faculties, integrating more natural and social science, shifting from professional faculties to academic departments, centralizing the internal academic and administrative apparatus of universities, pushing general studies as an alternative to immediate entry into a professional faculty, introduction of credit systems to allow students some mobility among academic units, and so forth. Actually, this reform package inspired a young scientist (Alberto Taquini) who had observed the U.S. system up close. He gained the ear of military rulers; these efforts would center not on UBA but on building a network of public provincial universities that would try to break with the UBA mold.

Increasingly, however, university reform and even basic functioning fell hostage to turbulent national politics. Dictatorial periods had repeatedly taken a toll (1930, 1946, 1955). In the 1940s and 1950s Juan Perón's style of

populism brandished an anti-intellectual orientation. But it was the military governments of 1966 and especially 1976 that inaugurated the campaigns of terror and austerity that brought the worst nightmares in UBA's history. In between, the last incarnation of Perón's rule clashed with a growing revolutionary movement to produce a violent climate for universities.

The last period of military rule (1976–83) was so brutal and sustained that it dismantled much of the university's—and therefore the nation's—intellectual infrastructure. Argentina gained notoriety for the disappearance of intellectuals and students. Others were simply fired or forced out by the penury that sapped units throughout the institution. Many went into exile, often contributing notably to the academic life of other countries. Autonomy and academic freedom were demolished and stunningly stupid proscriptions were put into effect regarding subject matter and teaching methods integral to universities in the modern civilized world. Nearly the entire national budget for science and technology was funnelled through a national council that was dependent on the dictatorial executive and crippled the universities' research capacity.

The ousting of the military brought immediate normalization to UBA in terms of its autonomy and academic freedom. Repression and violence terminated.

Yet this would hardly mean a new period of tranquility. First, UBA plunged headlong into some of its debilitating prior practices. Unlike Chile, Argentina allowed redemocratization to be interpreted as license for a grand opening of university access; enrollments jumped from just over 100,000 to nearly 150,000 within a couple of years, convincing some leading professors that UBA would just not be a serious academic institution. Political parties and other factions once again came to be too influential in election of administrative leadership and in academic decision making.

Second, a furious debate emerged over the wide-ranging modernization agenda that seeks to obliterate some enshrined principles (e.g., free tuition) and reconceptualize others (e.g., autonomy). Public universities were threatened with becoming less public in the sense of entitlement to automatic, generous public subsidies entrusted to an autonomous entity. Instead, they would move into the market place more, seeking ample private funds and proving themselves accountable for their performance. To succeed in a more competitive environment, UBA and others would need to manage themselves much more efficiently on bottom-line, cost effective academic-economic measures than of on the political calculations that predominate too often in practice.

The prime promoter of the modernization agenda is the government, its neoliberal political-economic policies in step with powerful international banks and other agencies. The prime opponent is UBA, in step with most public universities and their constituencies. The University of

Buenos Aires' centrality results from its size, location in the capital, and simply its venerable status as leader of the university system; its central role probably also results from the perception that its practices are so much the target of the modernization agenda.

This is not to imply that the university stands as total and immovable opposition. On the contrary, important internal divisions and elements of the modernization agenda attract a sympathy or at least a decent hearing where earlier they would have been summarily dismissed. One example is evaluation, where Argentina makes more progress than most other Latin American nations. Another example of modified policy is the university's engagement in applied research for businesses as a way of increasing relevance and service. For example, UBATEC S.A. is a tripartite firm in which UBA, the government, and industry each holds about one third of the stock.

Any understanding of UBA's responsiveness to the modernization agenda, and of the great dangers that it faces if it does not respond much more, requires consideration of competition from other universities. Although most of the public provincial universities have basically followed UBA in structure and practice, some have been innovative, and have received rewards accordingly. But it is private universities that pose the most pointed challenge for UBA.

The University of Buenos Aires led a bitter but ultimately losing resistance to the legalization of private universities in 1959. (The battle actually pitted brother against brother, rector of the UBA versus president of the republic.) The university did succeed, however, in erecting barriers such as probation periods and proscription of public subsidization. With a few exceptions, including institutions that operated as safety nets for professors forced out of the more repressed UBA, private universities remained rather marginal to academic life. Even then, however, they were vivid examples of life with tuition instead of subsidy and they often showed the way into business-related fields of study that earned job-market success for graduates. Today, a growing number of new and old but expanding private universities aim to challenge UBA in a growing range of academic arenas, especially those related to the economy and the modernization agenda.

Nor is the challenge to the UBA limited to universities. In the 1960s and 1970s university problems led to the creation of dozens of private and public research centers. Many were headed and staffed by UBA refugees. Centers often grabbed the lead in research and elements of the modernization agenda such as the attraction of diverse income and differential rewards based on evaluated performance. As these centers face their own set of problems and limitations, a challenge for UBA is to attract some of their talent, develop joint relationships, and emulate their appropriate practices.

However great its difficulties are, UBA remains easily Argentina's leading academic institution. Three reasons are (1) its leadership in research; (2) its leadership in professional training; and (3) its size and breadth.

The University of Buenos Aires' leadership in research is remarkable given the university's turmoil and the rise of alternative institutions. But most centers are rather small and some have recently faded; only recently have a few private universities undertaken a serious research effort. The nearly 3,000 researchers at UBA represent about 15 percent of the nation's total. Yet UBA is not merely ahead in a nearly empty field. Argentina manages to stay around the top among Latin American nations. If that owes much to the high level of human resources produced even in distressed institutional and political environments, surely UBA deserves some praise for its role in the development of those resources. It also has managed to build some protection for research in its institutes and in its faculty of science. It has produced the country's only three Nobel Prize winners in science: Bernardo Houssay (1947), Federico Leloir (1970), and César Milstein (1984).

More ample success has been achieved in professional training. This fact gets obscured because of normative notions that universities are most appropriately about academic elite activities headed by research and graduate education. The university itself contributes to the fiction by its exaggerated academic claims. Its own statutes maintain that research is undertaken in all its faculties and departments. What UBA mostly does, however, today as historically, is produce professionals in a variety of fields. To be sure, its record there too is mixed as many faculties suffer from lax admissions and standards, poor staff, outmoded curriculum, and a terrible waste of resources. Additionally, the university continues to provide professional training in a given field even though so many graduates will not find work in that field; they would be better served by a somewhat broader education. Still, some faculties (e.g., philosophy and letters) do provide a fine education to broaden horizons and improve critical abilities. Moreover, Argentina is a nation with many proficient professionals, and no institution plays as large a role as UBA in training them. In several fields, UBA remains the preferred place to go.

Finally, UBA's importance relates to its enormous size and scope of activity. The University of Buenos Aires joins Mexico's national university as the two largest university-level institutions in Latin America. It is easily Argentina's most multifunctional, versatile, diversified, and complex university.

The University of Buenos Aires still holds 28 percent of the nation's university enrollments (compared to roughly two-thirds the 1920 total). Its budget is approximately \$250 million. The university is made up of 13 faculties or schools. At the graduate level it offers 105 courses, 11 doctorates, 11 masters, and 114 specialized careers. It also has a basic cycle program for new stu-

dents and a center for advanced studies, as well as two secondary schools. In terms of services to its students and the broader community, UBA has 18 libraries, a cultural center (*Centro Cultural Ricardo Rojas*), 8 museums, 5 assistance units, a clinical hospital, a health center, and ■ sports facility. To all this it adds distance education. Its best-known distance program is UBA XXI (twenty-first century), which includes optional counseling; a novel distance agreement was signed with the Federal Penitentiary Service.

Like the country it serves, the University of Buenos Aires has lived a tumultuous century. Like the country, it suffers from ■ profound sense of unfulfilled promises born in the prior century and repeatedly reconstructed since. Yet, also like Argentina itself, it has much to take pride in and seems to have entered a fresh period of reform.

—Marcela Mollis and Daniel C. Levy

UNIVERSITY OF CALIFORNIA (California, U.S.A.)

- Location:** Nine campuses located throughout the state of California in Berkeley, San Francisco, Davis, Riverside, San Diego, Los Angeles, Santa Barbara, Irvine, and Santa Cruz. The original campus is located in Berkeley, east of San Francisco Bay and north of Oakland.
- Description:** A state university system currently operating on nine campuses. Eight of the campuses offer general education services; the ninth, at San Francisco, specializes in health sciences. The university system is tuition-free to qualified residents of California.
- Information:** Admissions and Relations with Schools
110 Sproul Hall #5800
University of California, Berkeley
Berkeley, CA 94720-5800
U.S.A.
(415) 642-3175
- Visiting:** Guided tours can be arranged year-round, by contacting the Admissions Office at the above number or at the appropriate campus. Information for UC campuses can be obtained at the following numbers: Los Angeles: (310) 825-4321; San Francisco: (415) 476-9000; Davis: (916) 752-1011; Santa Barbara: (805) 893-8000; Riverside: (909) 787-1012; San Diego: (619) 534-2230; Santa Cruz: (408) 459-2495; and Irvine: (714) 856-6345.

California legislators had already made constitutional provisions for a state university by the time the state was admitted to the union in 1850. Clearly, the architects of America's westernmost frontier envisioned a community that would require the progressive education of its future leaders.

In 1853, the state of California received 46,000 acres of land from the federal government for the purpose of raising money to form a "seminary of learning." In 1862, the federal government's Morrill Act made land grants available to states committed to establishing schools of higher learning in agriculture and the mechanical arts. California was awarded 150,000 acres, and in 1866 the state legislature drew up a mandate for an agricultural, mining, and mechanical arts college.

Independent of the state's plans, in 1853 two transplanted easterners, Reverends Henry Durant and Samuel

H. Willey, helped establish the Contra Costa Academy in Oakland at a cost of \$30,000. Their first site, at Broadway and Fifth Street, was a former fandango house. Two years later, the struggling school was incorporated by state charter as the College of California.

Upon announcement of the plans for the state university, Governor Frederick Low and the advisors of the College of California agreed on a merger: the state would take over the college's land in exchange for the promise that the state would establish a "complete" university, adding courses in the humanities to the practical sciences stipulated by the Morrill Act. On March 23, 1868, Low's successor, H.H. Haight, signed a new act forming the University of California—an event now celebrated in the UC system as Charter Day.

The transfer of property included the College of California's undeveloped land four miles to the north of its Oakland home. Many residents of that area supported the college's relocation and offered land for its use free of charge. To appease less enthusiastic neighbors, founding administrator Willey arranged a homesteading plan, reserving 160 acres for the campus and selling another 160 at \$500 an acre. On April 16, 1860, nine trustees dedicated the site at a landmark christened "Founder's Rock."

After great debate, the town that sprung up around the anticipated campus was named "Berkeley," honoring George Berkeley, the Bishop of Cloyne, an early eighteenth-century teacher who had come to America to educate the New World's "aboriginal Americans" and who had been instrumental in outlining plans for Columbia University in New York. Streets of the new town running east-west were named for famed literary men (Brancroft, Dwight, Hawthorne), while streets running north-south were named for distinguished men of the sciences (Audubon, Bowditch, Choate). Frederick Law Olmsted, the renowned landscape architect who was in the midst of designing New York's Central Park and who would later draw plans for Stanford University, was enlisted to design the Berkeley campus. His blueprint, however, yielded only a few characteristics that remain today: the central axis that came to be known as Campanile Way and campus entrances at the south and east ends.

The newly established Board of Regents of the University of California presided over the university's opening in 1869. Graduates of the College of California had officially become alumni of the university one year earlier. Ten faculty members and 40 students were on hand for UC's inaugural year. Of those students, 12 graduated in 1873; the members of this charter class came to be known



University of California, Berkeley

as “The Twelve Apostles.” The prestigious group included a future congressman and a future governor, lawyers, professors, financiers, and a minister.

In 1870, women were permitted to apply to the university; 17 were admitted. Henry Durant, president of the College of California, was chosen as president of the new university, replacing interim president John LeConte after the regents’ first two choices (including Yale professor Daniel Coit Gilman) declined the invitation.

In establishing the university, the legislature had stipulated that state residents would be exempt from tuition as soon as the regents deemed their operating budget to be sufficiently funded. After three months at the Berkeley site, the university became tuition-free for Californians, a policy that remains in effect today. Over the years, supplemental services such as health care have been covered by an “incidental fee” (a little over \$2,100 for California residents for the 1996–97 academic year). In addition, the Vrooman Act of 1889 provided the university system with 1 cent of revenue for every \$100 of taxable property in the state. The figure was later raised to 2 cents per \$100.

In 1872, Durant stepped down from the presidency, suggesting that the board of regents find a younger man to replace him. They did, in the person of Yale’s Gilman. Gilman remained in his post a scant three years, however, during which time a campus construction supervisor was accused of financial mismanagement. Although Gilman himself was exonerated of any wrongdoing, he departed amid controversy in 1875, assuming the presidency of Johns Hopkins University. Although his stay was short, Gilman left a legacy at Berkeley. Gilman’s expansive vision for the university was fitfully implemented over the next few decades as several presidents came and went. Between 1874 and 1894, five men held the top post—John LeConte, William T. Reid, Edward S. Holden, Horace Davis, and Martin Kellogg. None served longer than seven years.

By 1873, the Berkeley campus’s North and South Halls, designed by David Farquharson, had been completed, and classes were moved to the new site from Oakland. The student body that first year in Berkeley included 199 students, of whom 26 were women. In

1881, another long-time campus fixture, Bacon Hall, was completed. Originally used as a library and art gallery, the magnificent Victorian Gothic building and its holdings were the gift of Oakland businessman H.D. Bacon.

From the beginning, gifts to the university were instrumental in its growth: eccentric San Franciscan James Lick, for example, funded the world-renowned Lick Observatory, established at Mount Hamilton, with \$700,000 left in his will. In 1873, Dr. Hugh Toland presented the university with the medical college that bore his name, located across the bay in San Francisco. His generous gift included \$100,000 worth of property. Also in San Francisco, Judge Serranus Clinton Hastings made the establishment of the Hastings College of the Law possible with a \$100,000 contribution to the state treasury. In 1891, five scholarships for women were endowed by Mrs. Phoebe Apperson Hearst, an active participant in the growth of the university and a regent as of 1897. Hearst funded two buildings on the Berkeley campus (including the Hearst Memorial Mining Building, dedicated in memory of her husband, Senator George Hearst). At the turn of the century, she led an international search for an architect to design the campus layout. Another widow, Mrs. Jane K. Sather, memorialized herself and her late husband, Peder, with the donation of two of Berkeley's most recognizable landmarks—Sather Gate and the 307-foot-high Sather Tower (also known as the Campanile).

There was much international fanfare over Hearst's architectural contest, the application of which stated that the university sought ■ design with "no more necessity of remodeling its broad outlines ■ thousand years hence than there would be of remodeling the Parthenon, had it come down to us complete and uninjured." First place was awarded to Emile Henry Benard of Paris, whose \$80 million plan was designed to create just such an imposing campus in the classical tradition. Critics, however, decried the exorbitant cost of his plan and its imposing design. A discouraged Benard left Berkeley not long after he arrived, and the campus layout has since evolved in piecemeal fashion.

After Benard's departure, the university's Bernard Maybeck, a guiding light in efforts to unify the campus layout, enlisted fourth-place contestant John Galen Howard to design Hearst's Memorial Mining Building. Howard was appointed supervising architect of the Berkeley campus in 1902, where he presided over the completion of 11 major buildings in 12 years. In 1914, work was begun on halls named for university presidents Gilman and Wheeler and geologist Eugene W. Hilgard, buildings which joined the Charles Franklin Doe Library, Agriculture Hall, and the Hearst Mining Building as the nucleus of the campus. Howard remained on campus until 1927, insuring ■ certain consistency of design, with most buildings erected in Greek or Roman styles in imported white stone.

In 1906, the newly completed Greek Theatre, the campus's outdoor venue, hosted a visit from the noted actress Sarah Bernhardt, who made ■ goodwill appearance in the wake of the San Francisco earthquake. Through the years, Berkeley's Greek Theatre has been the site of annual events such as Charter Day festivities and the "Big Game" bonfires that precede Cal–Stanford football matches. The reception building of the theater includes Flemish Gothic tapestry and fourteenth-century Italian marble bas-reliefs, donated by Hearst's son William Randolph Hearst, who had provided funding for the theater in 1903 and would pay for its full-scale renovation in 1957.

By its 25th year, the university ranked in the top ten in the nation in such categories as financial support and numbers of students, graduate students, and faculty members. Although UC was 3,000 miles from the United States' best-known education centers, the ambitious institution began to attract an impressive roster of faculty members. Many of its earliest recruiting successes involved the practical sciences for which the university was originally established. The College of Agriculture, for instance, had an auspicious beginning with the arrival of noted soil chemist Eugene W. Hilgard in 1875. In 1885, Samuel B. Christy was appointed dean of the pioneering College of Mining, which would soon be attended by students from all over the globe. Elwood Mead, recognized as a premier authority on civil engineering, led his college to prominence; it would soon be called upon by the U.S. government when the Hoover Dam was being planned.

In 1899, the university welcomed its first true long-term leader, as Benjamin Ide Wheeler began his 20-year presidency. He arrived to lead ■ campus of 2,000 students; by his retirement in 1919, the student body had tripled. As a condition of his acceptance of the presidency, the former Cornell University professor of Greek was granted complete autonomy regarding the staffing of faculty and administration. During his tenure, Wheeler began the university's lateral expansion, establishing many classrooms in the field rather than on campus. He presided over the foundation of the University Farm School at Davis (1905); Riverside's Citrus Experiment Station (1907); La Jolla's Scripps Institution for Biological Research (1912); and San Francisco's Hooper Foundation for Medical Research.

In 1898, the former Toland Medical College had combined with the university's Colleges of Dentistry and Pharmacy, taking advantage of the \$250,000 grant appropriated by the state legislature to organize the "affiliated colleges." San Francisco mayor Adolph Sutro donated 13 acres of land at what was the westernmost part of the city, at Parnassus Heights, for a new campus. The Hastings College of the Law, though part of the new arrangement, remained in its downtown location; in 1939, San Francisco's College of Nursing would be added to the group.

At the turn of the century, California's Agricultural Society secretary Peter J. Shields led the call for the foun-

dation of ■ university farm. Dubbed the “father of the Davis campus,” Shields pursued the state legislature until he earned passage of a bill in 1905 calling for the establishment of the farming facility. One year later, after studying various climatic regions statewide, the legislature approved the purchase of 773 acres from Jerome C. Davis’s farm in Yolo County, near Sacramento. Construction was underway by 1909; two years later, classes had begun. University agriculture students could take supplemental semesters on the new campus, while state residents who had completed grammar school could apply to ■ three-year school at Davis to learn the farming process. By 1922, the Davis campus became the first university extension to move toward independent course loads, offering its own four-year degree programs.

Somewhat grudgingly, Wheeler’s administration began to explore the possibility of opening a second campus to accommodate residents in the southern half of California. Established in 1881, the Los Angeles Normal School was chosen as the site of an experimental arrangement in which the university would expand to include a southern branch. In 1919, Wheeler’s last year, the normal school began offering two years of college instruction; five years later a full four-year education was available. In 1927, the regents renamed the normal school the University of California at Los Angeles, informally known as UCLA (the “at” was eventually dropped). In 1929, new campus ground was broken on 383 undeveloped acres in the Santa Monica hills. The previous landowners, Edwin and Harold Janss and Alphonzo Bell, agreed to sell the plot for \$1 million; its market value was such that the three men made a gift of well over \$3 million to UC. Their asking price was provided by revenues from a local bond issue. In 1927, ground was broken on the four Italian Renaissance buildings of the new campus quadrangle—Royce Hall, the college library, the chemistry building, and the physics-biology building. In 1933 the southern branch established its graduate division.

President Wheeler’s great successes in broadening the university system were somewhat offset by increasing concern among the faculty over his omnipotence within the UC system. In 1919, the year of the president’s retirement, the faculty staged its so-called revolution, wresting control of nominations for its new members from the administration. The reorganization was implemented the next year, following Wheeler’s departure.

The university expanded rapidly, in direct correlation to the growth of its home state. As early as 1923, with the university scarcely a half-century old, its enrollment of 14,061 was the world’s largest. By the close of the 1920s, the University of California could claim 40,000 graduates. Women played an important role in shaping the campus: nearly half of Berkeley’s students at the turn of the century were women, or “pelicans,” so nicknamed because of their starched white shirtfronts.

Wheeler’s successor in the president’s office, political science professor David Prescott Barrows, recognized the need to ensure a strong academic community for the university’s booming student body, and he convinced the regents to operate under their first deficit budget. Their initial reaction to his half-million dollar proposal was that it still was not enough to assure the university’s place among the best institutions in the country, and a pleasantly surprised Barrows found himself with \$670,000 to allot.

William Wallace Campbell, professor of astronomy and long-time director of the Lick Observatory, succeeded Barrows in the presidency in 1923. By 1930, Robert Gordon Sproul had taken his place—in time to receive the results of a survey conducted by the American Council of Education which for the first time scored Berkeley among the finest institutions in the country.

Sproul was the first native Californian and the first Cal alumnus to accept the presidency. A student of engineering, vice president and comptroller of the university at age 34, and a secretary of the regents, he had been groomed for the job. Sproul’s three decades in office were characterized by his pragmatic approach to the system’s overwhelming expansion—it was the first major U.S. institution to move to a multi-campus plan. The energetic president would come to spend half of each year at Berkeley, one-third on the growing Los Angeles campus, and the rest at the other university outposts. By the 1950s, he had delegated sizable responsibilities to the holders of newly created chancellorships at Berkeley and Los Angeles and to the provosts of the other campuses. To assure dialogue among the campuses and their residents, Sproul instituted two yearly conferences, those of the California club and the all-university faculty.

Sproul’s dedication to the university system was evident in his pursuit of the finest researchers and educators. Physics professor Ernest O. Lawrence had invented the cyclotron (the so-called atom-smasher) at Berkeley in 1929, paving the way for California’s invaluable role in nuclear development. The Lawrence Berkeley Laboratory, located on “the hill” of the Berkeley campus, was established to conduct nuclear testing (toward peaceful ends such as nuclear propulsion and mining, as well as weaponry), with a second facility at Livermore, 40 miles to the southeast. Researchers at the LBL have been credited with the discovery of 15 chemical elements, including Berkelium and Californium, as well as the discovery of antimatter. Upon the outbreak of World War II, the university played an integral part in atomic research, opening the Los Alamos nuclear test facility on the desert floor of New Mexico. The university faculty, already the leader in Guggenheim Fellowships, would surpass Harvard by the end of the 1950s in memberships to the National Academy of Sciences as well.

Between 1944 and Sproul’s departure in 1958, his administration set in motion an era of phenomenal



University of California, Los Angeles

growth, acquiring its new campus at Santa Barbara and expanding the curricula of Davis and Riverside to include the liberal arts. In 1931, Sproul had commissioned a comprehensive Carnegie Institute study of the university's options for expansion. He retired in 1958, two years before various subsequent studies were combined and implemented as "The Master Plan for Higher Education in California, 1960-75." In 1960, the California state legislature convened a special session to enact the provisions of the Donahoe Higher Education Act, a proposal which incorporated most of the master plan.

The State College at Santa Monica, originally specializing in the manual arts and home economics and later evolving into a normal school for teacher training, was established in 1891. Fifty years later it was annexed to the UC system. In 1954, the new campus, designed as a high-quality liberal arts facility, was relocated ten miles west of Santa Barbara, to 414 acres of beachfront in Goleta, California. By 1958, the administration had seen fit to quadruple UC Santa Barbara's (UCSB) original 2,500 enrollment ceiling. Today, UCSB enrolls more than 17,000 students. Its environmental studies program, launched in the wake of a major 1972 oil spill, is often considered one of the nation's best. It also offers programs unique to the UC system such as an advanced course in theological study and a doctorate in musical arts.

Home to the university's Citrus Experiment Station since 1907, Riverside established its own liberal arts college in 1954. Sproul enlisted former UCLA Dean of the College of Letters Gordon S. Watkins to direct a liberal arts venture at Riverside, where the basic academic design was simplified to accommodate four divisions: humanities, social sciences, life sciences, and physical sciences. Upon opening, Riverside's two-to-one ratio of students to faculty was unrivaled; the campus's commitment to excellence was recognized almost immediately, as the *Chicago Tribune* listed Riverside as one of the ten best undergraduate facilities in the country in a 1956 study. By the early 1960s, Riverside was converted into a general campus. Its unique aspects include the California Museum of Photography, the J. Lloyd Eaton Collection of Science Fiction, and the Rupert Costo Library of the American Indian.

In 1958, Sproul was succeeded in office by Clark Kerr, Berkeley's former chancellor, a deeply principled moderator who would weather the turbulent changes on the UC campuses of the 1960s. Upon Sproul's retirement there were 44,000 students enrolled in the University of California system; projections for 1975 showed 120,000 students, a figure which demanded direct action by the regents and the administration. To accommodate the rising costs of campus construction, Californians supported bond-issue ballot measures in 1956, 1958, 1962, and 1964. Among changes in the state education system were new admission standards that afforded the top 12.5 per-

cent of California students an opportunity to attend the university; an agreement allowing California's state colleges access to the university's extensive library system; and the establishment of a joint graduate board presiding over a cooperative doctoral program between the university and the state colleges.

Kerr continued Sproul's decentralization of the UC system, increasing the responsibilities of campus leaders to ensure more adaptable solutions to the problems facing the by-now enormous system. In addition to new programs at existing campuses, such as Davis's new law school and the engineering studies established at Davis and Santa Barbara, the university opened three new campuses—San Diego, Irvine, and Santa Cruz—with an eye on still more rapid expansion in the near future. Davis was made a general campus of the university in 1959, and its schools of law and medicine were launched in 1964 and 1965, respectively.

At Los Angeles, the 1950s and 1960s saw a campus building frenzy, as some 60 buildings were erected. By the early 1940s, the university's southern branch had already become the fastest-growing major university in the country. Some of the most important additions to the campus included the Marion Davies Children's Clinic (1962), the Jules Stein Eye Institute (1966), and the Pauley Pavilion (1965), an athletic facility where Lew Alcindor (Kareem Abdul Jabbar) and coach John Wooden would raise UCLA to new heights in intercollegiate basketball. An earlier UCLA basketball star, Jackie Robinson, had gone on to break the color barrier in major league baseball.

During these years, UCLA firmly established its preeminence in the sciences. Dr. Ernest O. Lawrence's cyclotron had been transferred to the Los Angeles campus in 1946, and UCLA became a pioneer in computer programming techniques with its \$4 million investment into one of the first large computers at its Western Data Processing Center. Today, UCLA remains the only campus among the nation's top ten in research to be founded in the twentieth century. In 1950 and 1951, two professors, Drs. Ralph Bunche and Glenn T. Seaborg, won Nobel Prizes, for peace and chemistry respectively. In another discipline, librarians Lawrence Clark Powell and Robert Vosper raised the standard of the university's holdings to a level commensurate with the finest in the nation and played integral roles in the development of library services nationwide.

In 1959, La Jolla's Scripps Institution of Oceanography provided the base for another UC general campus. In 1956 and 1958, San Diego residents had voted overwhelmingly to offer the university 500 acres of prime land on the Torrey Pines Mesa at no cost, and the U.S. government had assured the donation of an additional 418 acres on adjacent Camp Matthews. The location's first college was named for former Scripps director Roger Revelle and its second for naturalist John Muir.

While the new campus became UCSD in 1960, the original Scripps Institution retained its name. Today, of all the nation's public universities, San Diego claims to have the highest percentage of undergraduates who go on to graduate school.

The general campus at Irvine, a few miles inland from southern California's Newport Beach, was opened in the fall of 1965. Its first 1,000 acres had been the gift of the Irvine Company in 1961. Soil scientist Daniel G. Aldrich Jr. was chosen as the campus's first chancellor. President Lyndon B. Johnson helped dedicate the campus on June 20, 1964, and the following year, Irvine welcomed its first affiliate, the California College of Medicine. Located amid one of the most densely populated regions of the country, Irvine specializes in urban planning studies. The campus also offers a graduate writing program and programs in neuroscience and atmospheric research.

Along with Irvine, Santa Cruz became the most recent campus to join the UC system, as the 2,000-acre Cowell Ranch overlooking Monterey Bay was selected for that purpose in 1961. Education at Santa Cruz began in 1965; in its earliest years, the facility added roughly one college per year, including its original liberal arts college, Cowell, and the Adlai E. Stevenson College (1966) for the social sciences. In addition, Santa Cruz now has charge of the Lick Observatory, as well as other unique departments such as the Institute of Tectonics, dedicated to the study of earthquakes. Like San Diego, Santa Cruz is based on the "cluster college" model, designed to help personalize the educational experience within a larger university system. By the early 1960s, the university system claimed 76,000 students, 40,000 employees, and a \$.5 billion yearly operating expenditure. President Kerr had taken to calling the UC system the "Multiversity."

Although the UC system was undoubtedly a source of great wealth to the state, its expansion would prove to be the underlying theme of student rebellion. Student unrest in the 1960s became synonymous with the Berkeley campus. The so-called Free Speech Movement and other protests of its kind brought the university's name a measure of notoriety it retains to this day. Increasingly, the student body at Berkeley and elsewhere expressed anxieties over the faculty's emphasis on research, the administration's link with defense, and the difficulty of learning in large classes, often taught by teaching assistants. These issues were among those that erupted in 1964, as students employed the methods of civil disobedience on the Berkeley campus, where they crusaded for freedom of speech.

On several occasions Kerr had made a point of reiterating the campus policy that the university would remain disengaged from "all political and sectarian influence"—allowing freedom of campus speech was not to be confused with the administration's endorsement of its con-

tent. These speeches came to be known as the "Kerr Directives." Also during his tenure, the university lifted a 12-year ban on communist speakers on campus in 1963. Although he was sympathetic to the concerns of the individual, his authority made him a target nonetheless.

At the east end of the Berkeley campus, a strip of land at the intersection of Bancroft Way and Telegraph Avenue would provide the arena for the dispute. Students regularly set up various political and religious recruitment tables at that location, to the east of Sather Gate. In 1959, Kerr had asked that the Bancroft strip be transferred to the city, but the order had not been carried out. In the summer of 1964, when the administration discovered that the Bancroft strip was still within the bounds of the campus, they banned active solicitation along the strip in accord with the ban already in existence on the general campus.

On September 28, Berkeley students confronted the university, setting up unpermitted recruitment tables at Sather Gate. The regents announced they were prepared to allow some degree of on-campus recruitment, but by this time the students had resolved to seek unmitigated freedoms. Two days later, five students manning tables for the Student Non-Violent Coordinating Committee (SNCC) and the campus's Congress of Racial Equality (CORE) were ordered to appear for disciplinary hearings. As they were being cited, CORE member and former Berkeley student Jack Weinberg began rebuking the administration. Weinberg's speech galvanized the students, addressing their concerns not just about political freedoms but about the quality of campus life in general. Later that day, philosophy student Mario Savio led hundreds of students in accompanying the five recruiters to their disciplinary hearing. When Berkeley's chancellor announced their suspensions, Savio and other student leaders drew up a series of demands and christened their new-born organization the Free Speech Movement (FSM).

On October 1, Weinberg was arrested at one of the recruitment tables for refusing to identify himself. A police car was summoned; by the time it arrived, hundreds of students had gathered to block its departure. Overnight and into the following day, the police car holding Weinberg remained on the plaza amid the students' sit-in. California Governor Edmund G. Brown refused to send in the National Guard, fearing the incident would be identified with the recent civil rights demonstrations in the deep south. Later on the second day of protest, President Kerr agreed to moderate a meeting between his administration and student leaders. As 500 police officers stood ready to arrest the demonstrators, the two sides agreed upon a six-point settlement. Outside on the plaza, Savio mounted the besieged police car and called off the protest.

The crisis was not over, however. During the Thanksgiving holiday, the administration moved to discipline the main participants in the demonstration. Angry activists

scheduled ■ massive protest for December 2, 1964. At that rally, Savio spoke: "When the operation of the machine becomes so odious that you can't take part," he said, "you've got to put your bodies upon the gears . . . and you've got to make it stop." One thousand demonstrators occupied Sproul Hall and stayed there through the night. At 3 A.M. on December 3, Berkeley's Chancellor Strong went through Sproul Hall asking the students to leave; those who did not were rounded up by over 600 law officers. Later that day, hundreds of faculty members passed a resolution calling for charges against all student agitators to be dropped and for the immediate implementation of freer campus speech codes. For several days, the campus was embroiled in picketing and its normal operations were disabled.

At ■ tense gathering at the Greek Theatre on December 7, Kerr publicly accepted a proposal drawn up by academic leaders. Shortly thereafter, Chancellor Strong, suffering from health problems, was granted a leave of absence. Berkeley had finally found an uneasy peace. By the spring of 1965, the FSM had disbanded in favor of more specialized movements. Protests, however, continued to have an impact on campus life: rallies for various advocacy groups were staged daily, and in March 1965, a campus visitor was arrested for displaying an obscenity on a placard, igniting the so-called filthy speech rallies. The 793 students who had been arrested in Sproul Hall went on trial in April. Most were fined for trespassing or sentenced to short jail terms for resisting arrest. Savio, Weinberg, and Arthur Goldberg were given 120 days in jail; their appeals reached the Supreme Court in 1967, where they were denied a hearing.

Berkeley's unrest did not significantly hamper the UC system's ability to attract faculty and students, but it did anger alumni and potential benefactors, who felt the university's prestige had been undermined. In 1966, gubernatorial candidate Ronald Reagan promised to control Berkeley's dissenters, claiming that Kerr had been too lenient with them. In 1967, the newly elected governor threatened to trim \$35 million from the university's operating budget; he also called for tuition charges at UC, drawing crowds of thousands in protest in Sacramento. The UC budget for 1967-68 was eventually trimmed by more than \$20 million. Reagan's motion to institute tuition fees was defeated, but he did secure an \$81 per student rise in yearly incidental fees.

By 1968, Kerr had been coerced into resigning, but incidents of civil disobedience did not end with his departure. On the UCLA campus, students had staged a 1967 sit-in protesting on-campus interviews conducted by the Dow Chemical Company. In 1969, incoming UC president Charles Hitch was faced with the so-called People's Park incident, when thousands of students and residents occupied a parcel of Berkeley land, demanding that it be turned into a community park. In another Berkeley scene watched closely throughout the nation,

Reagan called in the National Guard to put down the protesters.

By the end of the 1970s, however, political idealism had dwindled on the Berkeley campus. Surveys at the time showed that 43 percent of the students considered themselves politically moderate, while 17 percent argued that the administration retained the right to ban certain speakers from appearing on campus. Still, some political issues continued to gather attention: on the Santa Cruz campus, 400 students were arrested in 1977 while protesting the university's financial holdings in South Africa. Other groups have sought an end to the university's affiliation with the Livermore and Los Alamos nuclear testing labs.

In recent years, the university has been the forum for protracted debate over affirmative action. In 1977, white student Allan Bakke sued the university, claiming that he was denied entrance to the Davis Medical School in favor of less-qualified minorities. The case reached the U.S. Supreme Court, which heard for the first time ■ "reverse discrimination" argument. The Supreme Court overturned California's ruling against the university's special admissions program, but at the same time the high court ordered Bakke's acceptance at Davis, indecisively concluding the issue. In 1995 the UC Board of Regents struck down its commitment to affirmative action, sparking renewed national debate over the decades-old policy.

With a total enrollment topping 30,000, Los Angeles now has the largest student population in the UC system, surpassing Berkeley. The UC system continues to grow at a remarkable pace: even its smallest general campuses, at Riverside and Santa Cruz, have approached or topped enrollments of 10,000 students in recent years. California's role in the Pan-Pacific community increasingly affects the makeup of its student body: Berkeley today has a higher percentage of Asian-Americans than Caucasians.

The faculties of the University of California continue to excel, to date having garnered 29 Nobel Prizes, with 18 of those laureates currently in residence. In addition, a record 241 members of the National Academy of Sciences grace the UC faculties. Ten percent of all federal funding for secondary-education research goes to the UC system, and ten percent of all Ph.D.s earned in the United States are earned at UC.

Wielding the considerable strengths of its numbers and its traditions, the UC system has risen to prestige in all aspects of university life. From an initial graduating class of 12, the university and its affiliates have spread to dozens of locations throughout California, the nation's largest state, where it provides services for over 150,000 students per year. Despite the inevitability of such an immense institution encountering periods of darkness in its collective mission, the University of California stands by its original motto—*Fiat Lux* (Let There Be Light).

Further Reading: Verne A. Stadtman, longtime editor of the California Alumni Association's monthly magazine, has written two essential, exhaustive histories of his alma mater: *The Centennial Record of the University of California* (Berkeley: University of California, 1967) and *The University of California 1868–1968* (New York: McGraw-Hill, 1970). A more casual source, *Cal: A Guide to the World's Largest University and the Bay Area* by Steven Warshaw (Berkeley: Endymion, 1983), includes a concise section on the Free Speech Movement, among other topics. Two pictorial histories of the university include short but efficient texts: *Photographic Guide to the University of California, Berkeley* by Benjamin B. Ehrich (Palo Alto, California: Pacific Books,

1969), and *The University of California: A Pictorial History* by Albert G. Pickerell and May Dornin (Berkeley: The Regents of the University of California, 1968). The Writers' Program of the Work Projects Administration in Northern California produced a helpful history, *Berkeley: The First 75 Years* (Berkeley, California: Gillick, 1941). Finally, *UCLA On the Move during Fifty Golden Years 1919–1969* by Andrew Hamilton and John B. Jackson (Los Angeles: Ward Ritchie, 1969) provides much information about UC's largest campus not found in the general texts.

—James Sullivan

UNIVERSITY OF CAMBRIDGE

(Cambridge, England)

Location: Sixty miles north of London, 80 miles northeast of Oxford.

Description: The second-oldest university in England, enrolling approximately 15,000 students in 31 autonomous colleges.

Information: The Registry
The Old Schools
Trinity Lane
Cambridge CB2 1TN
England
(01223) 332 200

The University of Cambridge was one of only two universities in England until 1825 (although there were four in Scotland, a separate kingdom until 1707), and even now it is one of the most socially prestigious and academically successful universities in the United Kingdom. It has unavoidably developed largely in tandem with the enormous social and economic changes which have transformed a small, marginal western European kingdom, first into the center of the world's largest colonial empire and a pioneer of scientific and industrial modernization, and then into a post-imperial country exposed to global competition and uncertain of its future. Along with the University of Oxford, the other "ancient university" of England, which is still customarily seen as its main rival, it has sometimes become disconnected from these changes, notably in the eighteenth and early nineteenth centuries, but it has retained throughout its intimate connections with leading individuals and groups in British politics and culture.

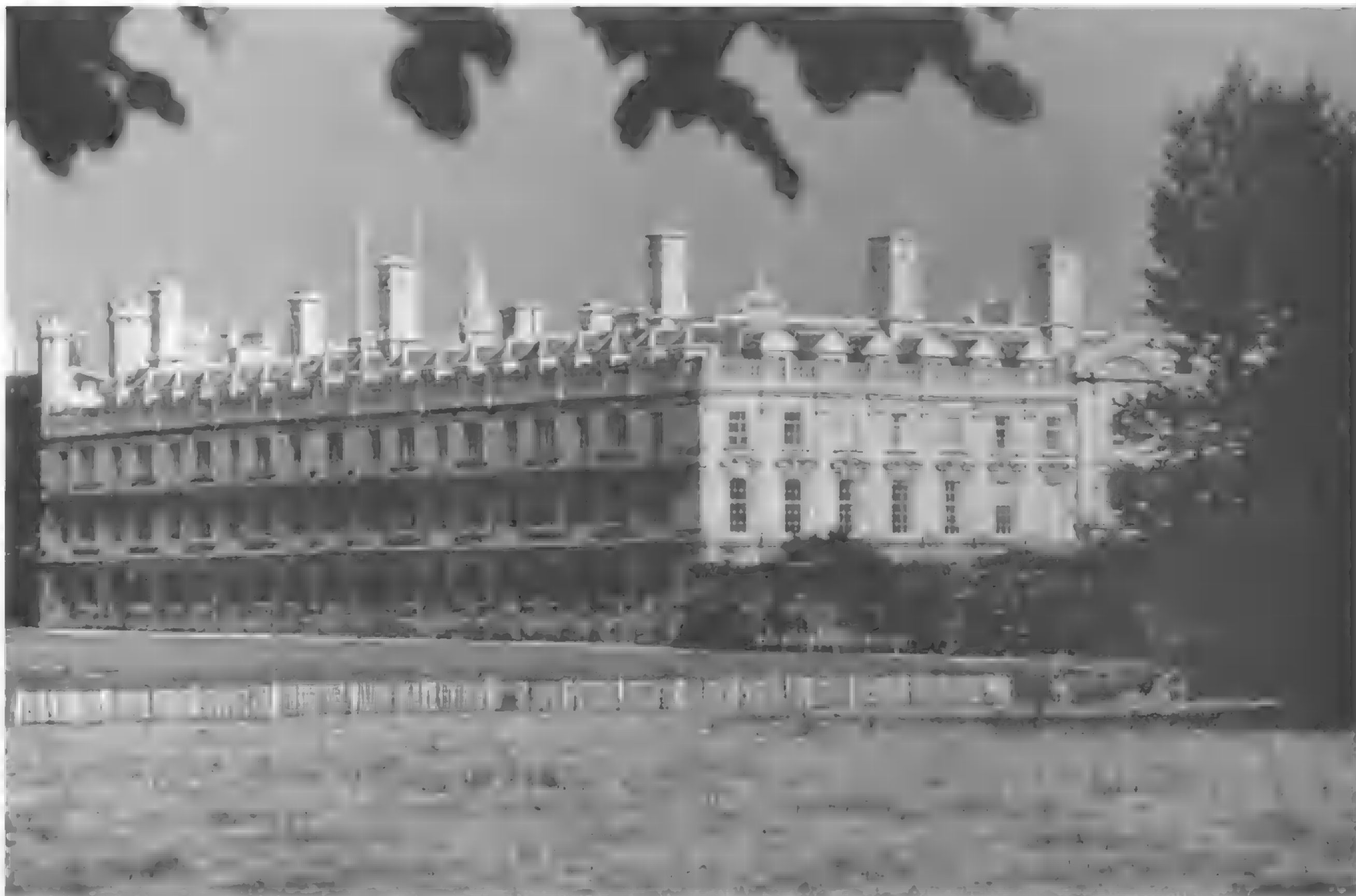
The origins of the university remain obscure. The first scholars to settle in what was then a market town on the Cam River appear to have arrived from Oxford, where some kind of advanced schooling already existed, around 1209. Their first meeting place was probably in or near the parish church, Great Saint Mary's, which had been built some time before 1205. By the time it was rebuilt in 1478, it was already being referred to as the university church. Graduation ceremonies were held in it until the opening of the university's Senate House in 1730; its bells were used to ring curfew for undergraduates at nine o'clock every evening until as recently as 1939; and it still receives financial support from the university today.

Such a close connection with Christianity is characteristic of universities founded in western Europe during the

Middle Ages. Both Oxford and Cambridge were to remain formally linked to the Church—first in the Catholic tradition and then, after the Reformation, to the Episcopal Church of England—until the middle of the nineteenth century. From a very early stage they were also to be subject to interventions by officials of the secular state. The first reference to a chancellor of the University of Cambridge dates from 1226. The first known case of royal intervention took place just five years later, when, in the name of King Henry III, its scholars were placed under the authority of the town's sheriff and of the Bishop of Ely and were required also to obey their own masters. The first recognition of the university by a pope came in 1233 in the form of a bull issued by Gregory IX, which confirmed the scholars' autonomy.

Three religious orders, the Dominicans, the Carmelites, and the Franciscans, also began teaching inside their own houses in Cambridge during the later years of the thirteenth century. Relations among the various Cambridge bodies involved in education were not clarified until 1276, when the Bishop of Ely declared a fundamental division between priests, or "clerks," attached to parish churches, who were to be answerable to his archdeacon, and those engaged in study, who were to come under the jurisdiction of the chancellor while remaining within their own houses or halls. Thus formal recognition was given to the model of organization which the university, like Oxford, had borrowed from the Sorbonne (the University of Paris). Both have remained federations of self-governing colleges ever since.

Peterhouse is the oldest remaining college in Cambridge, although it does not use the word "college" in its title. It was given its present name in 1284 but had been founded in 1280 as an annex of Saint John's Hospital under the jurisdiction of Hugh de Baldsham, the Bishop of Ely, who is regarded as its founder. Next came Michaelhouse, founded in 1324 by Hervey de Stanton, and later absorbed into Trinity College; University Hall, founded in 1326, refounded 12 years later by Lady Elizabeth de Clare, and known as Clare Hall until 1856, when it became Clare College; King's Hall, founded by Edward III in 1337, and also now incorporated into Trinity College; Pembroke College, founded in 1347 as Pembroke Hall by Marie de Valence, dowager countess of Pembroke; Gonville and Caius College, begun in 1348 as Gonville Hall, named for its founder Edmund Gonville and intended for the training of priests to serve in his native county of Norfolk; and Trinity Hall, founded in 1350 by William Bateman, Bishop of Norwich, and dedicated from the outset to the study of law. The last of this



University of Cambridge

early group was Corpus Christi College, known locally as Corpus, which was founded in 1352 by two guilds of Cambridge citizens. Its Old Court, which dates from soon after its foundation, is the oldest remaining example of the courts, sets of rooms around a paved or, more commonly, grassed yard, which have come to characterize Cambridge college buildings and which resemble the quadrangles (or quads) of Oxford colleges.

Each college had its own accommodation for its scholars, its own library, and its own dining hall, the three basic features which still define the college in principle. Their presiding officers, known as regent masters, shared in the administration of the university, alongside non-regent masters, who were in charge of the smaller hostels connected to one or another religious order. At this period the university was chiefly concerned with discipline and finance and consisted of the chancellor and other officials elected by the masters. From around 1278 they began to acquire houses near Great Saint Mary's as bases for administration and teaching, but they did not have a dedicated headquarters

built until around 1350. This complex, extended and rebuilt several times since and now known as the Old Schools, has remained at the heart of the university's activities, as distinct from those of the colleges. Lectures were being delivered there as early as 1400, and the university library was located there from 1438 until 1842. Today the Old Schools house the university's registry and the meeting room of its council, among other official bodies.

By the time the Olds Schools were opened, the university's status had been confirmed by two important documents. In 1317 it was granted a royal charter; in 1318 its officers were freed by a bull issued by Pope John XXII from their former subordination to the Bishops of Ely. Such official recognition did not protect the university or the colleges from occasional outbreaks of popular resentment, notably in 1381, when the Peasants' Revolt spread across southern England. Corpus Christi College, then the wealthiest, was attacked and damaged by a crowd of its tenants, the university records kept inside Great Saint Mary's were burned, and the homes of several university

officials were also pillaged. These disorganized protests culminated in a formal seizure of power over the university by the town authorities, the mayor and burgesses, who compelled the scholars to surrender the privileges granted by various kings. Prompt military action by the forces of the Bishop of Norwich, followed by judicial intervention to ensure the execution of the rebels' leaders and the restoration of the university's autonomy, restored the status quo. The uprising offers a salutary reminder that much of the enormous wealth of the colleges, at Cambridge as at Oxford, has been extracted, not only from distinguished patrons or charitable foundations, but also from their agricultural tenants, among whom were some of the poorest and most exploited people in England.

When not engaged in disputes with the town authorities or with their tenants, the scholars of Cambridge devoted themselves to the study of theology, law, and philosophy (known at Cambridge as moral sciences), the traditional subjects taught in all western European universities of the period. As the number of undergraduates steadily increased, four more colleges were founded. King's College was established by King Henry VI in 1441, one year after he had set up a school, Eton College, with which the college was to be long associated near the royal castle at Windsor. The construction of the famous chapel at King's began in 1446, but was not completed until 1526, by which time Henry's Lancastrian dynasty had given way to the Yorkists and then in 1485 to the Tudors. It is their version of the royal coat of arms, along with their symbol, the united red (Lancastrian) and white (Yorkist) rose, which appears above the chapel's west door. The chapel has since been enhanced with Flemish-style stained-glass windows, fan-vaulting, a sixteenth-century oak screen, a seventeenth-century organ, and a painting by Peter Paul Rubens, *The Adoration of the Magi* (1633–34), which was installed as recently as 1968.

The next foundation was Queens' College, established in 1448 by Andrew Dockett with the support of Margaret of Anjou, wife of King Henry VI, and later of Elizabeth Woodville, wife of Edward IV, who supplanted Henry in 1460. Its red brick Old Court, built soon after its foundation, still retains the appearance and atmosphere of the later Middle Ages. It was followed by Saint Catharine's College, called Catharine Hall until 1860 and still nicknamed Catz, which was founded in 1473 by Robert Woodlark, the provost of King's College (a post equivalent to master at other colleges); and Jesus College, founded in 1496 by John Alcock, Bishop of Ely, originally in honor of the Virgin Mary, Saint John the Evangelist, and the relatively obscure Saint Radegund, the patron saint of the nuns' priory which had previously occupied its site and the buildings of which, some still standing today, were incorporated into the college.

In the sixteenth century the University of Cambridge, like other universities in northwestern Europe, became a center of the humanist scholarship and reforming ideas

which fed the growth of Protestant forms of Christianity. One of the earliest representatives of these tendencies, although he himself remained within the Catholic Church, was John Fisher, who was to become chancellor for life and who was also chaplain to Lady Margaret Beaufort, the mother of King Henry VII. She was persuaded to endow what is still called the Lady Margaret Chair of Divinity (in theology), the university's first dedicated professorship, which Fisher was the first to occupy. She also, uniquely, founded two new colleges. Christ's College was founded in 1505 with the intention of reviving God's House, built in 1446, while Saint John's College, known as John's, was founded in 1511 with a bequest from Lady Margaret, who had died two years before. John's incorporates what is now one of the oldest buildings in Cambridge, the twelfth-century School of Pythagoras.

It was probably also Fisher who brought the great Dutch scholar Desiderius Erasmus to Cambridge, where he introduced the study of classical Greek, an essential tool in the program of biblical criticism, of which he and his associates were pioneers. Erasmus resided between 1510 and 1514 in what was then a new part of Queens' College, the Cloister Court, and is said to have worked on his groundbreaking edition of the Greek New Testament there. Although the writings of the leading Protestant, Martin Luther, were to be publicly burned in Cambridge in 1520, and Erasmus, like Fisher, remained loyal to the pope, the investigations which he inspired were to lead many Cambridge teachers and students to conclusions similar to Luther's. Among these, Thomas Cranmer, one of the first graduates of Jesus College, was to be the most prominent, as archbishop of Canterbury (the leading church official in England) during and after King Henry VIII's creation of the Protestant Church of England.

The triumph of Henry's Reformation was symbolized at Cambridge in 1534 by a formal denunciation of the pope, the execution of John Fisher, and the appointment of King Henry's leading adviser, Thomas Cromwell, as vice-chancellor of the university. The same year also saw the granting of a royal charter to the Cambridge University Press, now the oldest printing and publishing company in the world. Two more colleges were founded during the early years of the Reformation. Magdalene was established in 1542 by Lord Audley in the buildings of Buckingham College, a Benedictine establishment dissolved by Henry VIII. Trinity College—not to be confused with Trinity Hall—was founded in 1546 by Henry himself, a statue of whom adorns its Great Gate. The Great Court into which the gateway leads is said to be the largest enclosed courtyard in Europe. Trinity remains unique in being headed by a master who is not elected by the college's fellows (academic staff) but is appointed by the Crown.

During the reign of Henry's daughter Queen Mary I (1554–58), England briefly returned to the Catholic fold. Many university and college officials were dismissed, and the Protestant victims of the Marian persecutions

included three Cambridge-trained bishops, Thomas Cranmer, Hugh Latimer, and Nicholas Ridley, who were all burned in Oxford.

Yet another college was created under Mary, when Gonville Hall was refounded in 1557 by a physician named John Keys, who used the Latin form of his name, "Caius," in his scholarly writings. One of several university traditions is that the college is usually nicknamed Caius, pronounced "Keys." It is famous for the three gates which its founder had constructed for it, the Gate of Humility through which new undergraduates and visitors enter, the Gate of Virtue through which its fellows and students pass on everyday business, and the Gate of Honour, a triumphal arch through which undergraduates leave to receive their degrees.

The upheavals associated with the Reformation continued under Mary's sister and successor Elizabeth, who refounded the Church of England and also gave the university the Statutes of 1559 and the Charter of 1561, which regulated its activities up to the middle of the nineteenth century. But the religious reforms had already changed much more than the details of administration or the content of courses in divinity. In 1540 Henry had established five Regius professorships, posts which are still filled by the British prime minister in the name of the monarch, in divinity, Greek, and civil law, all of which were already being taught at Cambridge, but also in Hebrew and physic (medicine). In addition the dissolution of the monasteries and other religious houses and the dispersal of their lands and wealth among the nobility and gentry helped to alter the composition of the student body in both English universities, as more and more sons of landowners entered their colleges, displacing the poorer candidates. The medieval emphasis on theology and moral sciences began to give way to the humanists' emphasis on a broad, liberal education, including languages and history, and emphasizing individual study.

Nevertheless, Cambridge was still a mainly religious institution. Its teachers were all clergymen of the Church of England with many, sometimes most, of its undergraduates preparing to join the church too, and the spirit of the Reformation continuing to dominate Cambridge life and thought, perhaps especially in the last two foundations of the sixteenth century. Emmanuel College, founded in 1584 by Sir Walter Mildmay on the site of a Dominican friary dissolved by Henry VIII, was closely associated with the Puritan movement within the Church of England, whose adherents would break away in the following century to form separate, nonconformist churches both in England and in its North American colonies. Of the first 100 English university graduates to settle in New England more than 30 were from Emmanuel, including John Harvard, for whom Harvard University was to be named. Puritanism was also influential within Sidney Sussex College, founded in 1596 on the site of a dissolved Franciscan friary with money bequeathed by

Frances Sidney, Countess of Sussex. This college's most famous graduate was Oliver Cromwell, who went on to become a parliamentary general in the English Civil Wars, one of the signatories of King Charles I's death warrant in 1649 and, as Lord Protector from 1653 to 1658, the king's replacement. Since 1961 Cromwell's head, cut from his corpse after the restoration of the monarchy in 1660, has been buried inside the college.

In spite of political and social unrest the seventeenth century saw the university flourish, both intellectually and architecturally. Henry More and other philosophers, forming the group since dubbed the Cambridge Platonists, developed the idea of religious toleration and integrated the proto-scientific thinking of Francis Bacon and René Descartes into the curriculum; Isaac Newton was a fellow of Trinity College, residing there from 1679 to 1696 while working on his *Principia Mathematica*. Saint Catharine's Church was rebuilt between 1674 and 1687, the Old Court of Clare College was constructed between 1638 and 1715, and Christopher Wren, who taught astronomy at Cambridge and whose uncle, the Bishop of Ely, was his first architectural patron, designed the chapel at Pembroke, opened in 1665, the chapel at Emmanuel, built between 1666 and 1679, and the library of Trinity College, completed in 1695.

The eighteenth century, in contrast, saw something of a decline, as the number of undergraduates fell, reaching its nadir in 1760; but change continued, if more slowly. Moral sciences came to include elements of mathematics, astronomy, and physics. Addenbrooke's Hospital, founded in 1740 with a bequest from Dr. John Addenbrooke, a fellow of Saint Catharine's, has housed the university's School of Clinical Medicine ever since, although it was moved into a new set of buildings in 1984. The university's Senate House was built between 1722 and 1730, to designs by James Gibbs and James Burrough, to be used for graduation ceremonies, some public lectures, and meetings of the Regent House, the governing body of the university. (It would be impossible for it to contain the entire membership of the senate, which is defined as all those who hold a master's degree or a doctorate from the university.) Meanwhile, those who were members of the nobility received their degrees without taking any examinations, and in general Cambridge, like Oxford, gained a reputation for leisurely living rather than for academic prowess.

The transformation of Cambridge into what has been jokingly called "the city of perspiring dreams"—in contrast with Oxford, "the city of dreaming spires"—occurred during the nineteenth century, as a rapidly modernizing and expanding British empire burst in upon the university's courts. New colleges were founded and new buildings were erected, some of them accommodating strange new subjects and new kinds of students, while many of the assumptions and habits which had typified university life for centuries were challenged and faded away at Cambridge as at Oxford, at Harvard and at many

other leading universities. Throughout the century, too, the number of undergraduates increased, as the range of academic subjects widened.

The first sign of new life was a series of new buildings. Downing College, the first new foundation in more than 200 years, was established in 1800 with a bequest from Sir George Downing, who had died 51 years earlier. Its Greek classical buildings were constructed between 1807 and 1820 to designs by William Wilkins and then extended in 1953 and again in the 1980s and 1990s in a similar style. In addition, the front buildings of King's College were constructed in the 1820s to designs by William Wilkins which echo the frontage of the chapel, and John's became the first of the riverside colleges to expand across the Cam onto its western bank, with the building of its New Court and its covered Bridge of Sighs, both completed in 1831 in a neo-Gothic style.

While the colleges, apart from Downing, favored neo-Gothic styles, presumably because they fit better with their existing buildings, the university preferred to revive Classical styles for such buildings as the Fitzwilliam Museum, opened in 1848 to house prints by Rembrandt, pictures by William Blake, and paintings by Titian, Veronese, Rubens, van Dyck, Hogarth, Reynolds, Gainsborough, Turner, and Constable. By then Cambridge also had a railway station, built in 1845 by the Great Eastern Railway Company, which was compelled by the university authorities to locate its station at a distance from the colleges, because the noise and dirt of its trains.

But the modern world could not be kept entirely at bay. Queen Victoria's husband Prince Albert, chancellor of the university from 1847 until his death in 1861, encouraged the appointment of a royal commission to investigate both Oxford and Cambridge. Its report, published in 1852, directly influenced the shaping of new statutes, issued under an act of Parliament in 1856, which at last removed the traditional religious test from Cambridge life, except for divinity students, college officers, and members of the senate. From 1871, only divinity students and heads of houses were still required to be members of the Church of England. Further interventions by the national government ensured that, from 1877, the colleges would have to surrender some of their enormous incomes to the university and could no longer appoint fellows who did not teach, and that, from 1882, no college could dismiss a fellow merely for having married or left the Church of England. Almost 100 years after the French Revolution secularism had arrived in Cambridge.

However, this is not to say that the Divinity School, the oldest academic division of the university, immediately lost its importance. Indeed, it was moved in 1879 into a bigger building, now named for William Selwyn, its leading professor at that date, and two new foundations were devoted to religious studies. Selwyn College, founded in 1882 as a memorial to George Augustus Selwyn, the first bishop of New Zealand, required all its fellows to be members of the

Church of England; it did not become a full college of the university until 1958. Saint Edmund's College was established in 1896 as Saint Edmund's House, a college for Catholic students. It became a postgraduate institution in 1965 and changed its name in 1986, but it still has the only Catholic chapel in the university.

While divinity and the other traditional subjects of study survived intact, nineteenth-century Cambridge also underwent a gradual transformation into a center of scientific research and achievement, going far beyond established mathematical studies and even the work of Newton. This trend may be dated from 1833, when Professor William Whewell invented the word "scientist," or from 1851, when Whewell and others secured recognition for natural sciences as a faculty. Between 1863 and 1914 the area known as the New Museums Site became the home of many scientific laboratories and teaching rooms. Among these is the complex now called the Old Cavendish Laboratory, founded in 1874 by William Cavendish, Duke of Devonshire, then the chancellor. This was to be the university's center for experimental physics until 1973. It was inside the Cavendish that J.J. Thomson discovered the electron in 1897; between the two world wars, Ernest Rutherford pursued his research on the nucleus; James Chadwick discovered the neutron in 1935; and Francis Crick and James Watson worked out the double helix structure of DNA in 1953.

The nineteenth century also saw the university's first tentative steps toward widening access to its facilities. A Non-Collegiate Students Board was set up in 1869 to help and encourage those unable or unwilling to live in colleges. After becoming known as Fitzwilliam Hall in 1887 and as Fitzwilliam House in 1924 this organization was converted into Fitzwilliam College in 1966 and moved into a modernist building designed by Denys Lasdun. Three institutions for women have gone through a similar development, achieving their first success in 1881, when women were permitted to take university examinations for the first time, although they were still unable to take degrees. The first women's college, Girton, had been established by Emily Davies in the town of Hitchin in Hertfordshire in 1869 but four years later had moved to its present buildings designed by Alfred Waterhouse, more than two miles from the city center. It now admits both women and men. Newnham College was established in 1871 and moved into its present Dutch-style red and white buildings, which are unusual in not including a chapel, in 1875. Next, what is now Hughes Hall was founded in 1885 as a training college for women schoolteachers. It took its present name in 1949 to honor its first principal and was converted into a coeducational postgraduate college in 1973. Finally, in 1894 Homerton Academy, another teacher-training institution for women, founded in London in 1768, moved to Cambridge, taking over buildings abandoned by Cavendish College when it closed in 1892

(only 16 years after its opening) and becoming Homerton College. It remains exclusively devoted to teacher training but has admitted men since 1978.

The last of the great modernizing reforms of the university during the century was the development of the faculty of economics and politics, one of the leading centers of economic research and thought in the English-speaking world. There had been a professorship of political economy, the discipline which was to spawn both modern economics and political science since 1828, but the subject remained subordinate to moral sciences and to historical studies until after 1885, when the professorship passed to Alfred Marshall. His then-rare interest in linking academic research with the needs of industrialists and even labor unions inspired generations of British economists, while his campaign for an independent faculty at Cambridge met with success in 1903. Since then its members have included such influential economists as A.C. Pigou, John Maynard Keynes, and Joan Robinson.

By 1903, the University of Cambridge had moved decisively away from its medieval and early modern role as a loose federation of religious foundations providing the finishing touches to the molding of young gentlemen to become an assemblage of intellectual and material resources for the training of young men, and increasing numbers of young women, both in the traditional liberal arts and in the professional specializations of science, engineering, medicine, and law. During the twentieth century the university has further developed its strengths, occasionally creating new faculties, such as English in the 1920s, and social and political studies in the 1980s. These faculties have made notable contributions to their respective disciplines through the work of such critics as I.A. Richards, F.R. Leavis, William Empson, and Raymond Williams, as well as of such social scientists as Anthony Giddens, Quentin Skinner, and John Dunn. For most of the century Cambridge has also remained socially exclusive, partly because of the sheer expense of a Cambridge education, which has only slowly been made more widely available by government grants and scholarships.

The university's physical expansion has also continued. For example, in 1920 the university established the Scott Polar Research Institute to commemorate Captain Robert Falcon Scott, the leader of the second expedition to reach the South Pole, near which he and his companions died in 1912. Clare College commissioned two new courts across the river from its older building, the grey brick Memorial and Thirkell Courts, built between 1923 and 1955 to plans by Sir Giles Gilbert Scott. Scott also designed the new brown brick university library, opened in 1934, with its 160-foot high tower rearing up over the two Clare courts. Now the largest open-access library in Europe, it is also notable for its space-saving system of shelving books, within each subject, according to a system of four sizes. Meanwhile, the university's scientific faculties had already

expanded across Downing Street onto the Downing Site, purchased from Downing College between 1896 and 1902 and developed between 1903 and 1939 to accommodate teaching and research in the life sciences, as well as the university's Museum of Archeology and Anthropology and Sedgwick Museum of Geology.

During World War II many leading Cambridge academics played crucial roles in enhancing the British war effort and incidentally influencing the postwar world as well. For example, Professor Sir John Cockroft of the Cavendish Laboratory was closely involved in the development of radar as well as in the British contributions to the development of atomic weapons and of civil atomic power, while Alan Turing and other young mathematicians used "Ultra" machines, direct ancestors of the digital computer, to break supposedly unbreakable German codes. In Cambridge itself, where little damage was sustained from bombing, accommodation was provided for the London School of Economics and three other colleges evacuated from the capital.

In 1948 women were at last allowed to take degrees and to become members of university bodies, 28 years after the University of Oxford had introduced similar reforms and fully 70 years after the University of London had been the first in Britain to do so. Six years later New Hall was founded to provide more places for women students. This turned out to be only the first of seven new colleges. Churchill College was opened in 1960 in honor of Sir Winston Churchill who, ironically, never went to any university. Churchill was followed by three colleges for postgraduate students only: Darwin College, founded in 1964 and given collegiate status the following year, which is housed in Newnham Grange, once the home of Charles Darwin; Wolfson College, established by the university itself as University College in 1965, but renamed eight years later to mark a large donation from the Wolfson Foundation (now admitting undergraduates as well, so long as they are over 21 years old); and Clare Hall, created by Clare College in 1966 but made independent in 1983. Two other colleges have brought the total number to 31. Lucy Cavendish College, founded in 1965, 40 years after the death of the campaigner for women's education whom it commemorates, remains unique in having exclusively female staff and restricting admission to women over 21; Robinson College, founded in 1977 with funds donated by the wealthy businessman Sir David Robinson, was opened in 1981.

While new colleges were opening, and the older colleges were expanding their accommodations for steadily rising numbers of students, the university too was growing and taking up still more space in the city. During the 1960s the arts faculties of the university were brought together in buildings spread across the Sedgwick Site. The most famous, or notorious, of the new buildings has been the History Faculty Library, designed by James Stirling and completed in 1968, which has been praised for its striking

combination of large areas of glass with a structure of traditional red bricks but which has proved difficult and expensive to maintain. In addition, the university's scientific work moved to a new stage 1981, when Trinity College opened its Science Park on the outskirts of the city. This project, in which the university and other colleges also take part, is intended to close a perceived gap between academic researchers and the computing, pharmaceutical, and other companies which exploit their discoveries and which have relocated to the site.

This larger and more varied university now has a larger and more varied population of students. One reason has been the trend toward opening traditionally single-sex colleges to both men and women. In 1972 Church, Clare, and King's were the first to become mixed, and by 1995 only three single-sex colleges remained: Newnham, New Hall, and Lucy Cavendish, all for women. Another reason has been the enormous growth, in line with other British universities, in the numbers of postgraduate students in all of its colleges; they now account for one-third of its total of 15,000 students. A third, but so far less important, reason has been the abolition in 1985 of the university's entrance examination. It was widely believed that the examination had unfairly favored applicants from the public schools (British English for private schools), who could be specially coached and who might also have been able to take advantage of historic ties between their schools and the university. However, the system which has replaced it, depending on a combination of national examination results and interviews, has hardly altered the situation, for just under half of undergraduates still come from this small minority of schools, and the historic under-representation of northern England, in comparison with London, the southeastern counties around it, and East Anglia, the region in which Cambridge stands, continues today.

One more change in the nature of the university is that since World War II it has come to depend on public funds from national and local governments for most of its income. Partly in order to offset this reliance on public funds, the university launched its first general fund-

raising campaign in 1993, aiming to gather 250 million pounds by 2003. The campaign reached 60 percent of its target in its first two years, at least some of the money coming from its alumni; they, like Oxford's graduates, are still disproportionately represented in the ranks of the civil service, among judges and politicians, in the management of the media, and in other leading positions in British society.

The University of Cambridge has already undergone several major transformations during its history. An offshoot of the medieval church, training priests and lawyers, has become, in succession, a finishing school for the sons of the wealthy, a center of scientific excellence, and a modern university with an international reputation; an institution originally open only to a very small number of well-connected men faithful to the dominant religion has become accessible to a much wider range of people, teaching and studying an enormously wider range of subjects. The achievements of at least some Cambridge teachers and graduates, in politics, science, economics, and the arts, have affected British and even world history, for better or for worse. If the university can go on adapting to changing conditions as it has in the past, there may well be more to come.

Further Reading: Cambridge University Press has published an interesting anthology of writings about the university, *Cambridge Commemorated*, edited by Laurence and Helen Fowler (1984); *A History of the University of Cambridge* in four volumes, edited by Christopher Brooke (Cambridge and New York: Cambridge University Press, 1989–92); and the latest of several semi-official illustrated guides, Kevin Taylor's *Central Cambridge: A Guide to the Universities and Colleges* (Cambridge: Cambridge University Press, 1994). *My Cambridge*, edited by Ronald Hayman (London: Robson, 1977; revised edition, 1986), is a collection of memoirs evoking Cambridge from the 1930s to the 1960s.

—Patrick Heenan

UNIVERSITY OF CANTERBURY

(Christchurch, New Zealand)

Location:	In Ilam, seven kilometers from Christchurch, South Island, New Zealand.
Description:	An autonomous coeducational university offering undergraduate (first) and postgraduate (higher) degrees, with 11,000 undergraduate and postgraduate students.
Information:	University of Canterbury Private Bag 4800 Christchurch New Zealand (3) 3667001

The early settlers and planners of Christchurch were determined to bring the Anglican tradition and excellence in the educational system to this planned settlement. In 1848 in England a highly educated group formed the Canterbury Association and two years later published the "Scheme for the Establishment of Christ-Church College." After their arrival in New Zealand, great efforts were made to establish a university as quickly as possible. They did, indeed, want to remain part of the world, even though they felt on the edge of it.

In 1872 the inaugural address of the board of governors for the newly formed body, the Canterbury Collegiate Union, stated the policies of the existing University of New Zealand: to provide accessible higher education; to offer assistance to existing institutions serving the major communities; and to encourage talents without barriers of distance, wealth, or class.

Only a year later, 23 years after the founding of the settlement of Christchurch, Canterbury College was established as a constituent college of the federal University of New Zealand. It was the second university on the South Island and the fourth in New Zealand and Australia, following the universities of Otago, Auckland, and Melbourne. Christchurch, inhabited by 13,000 people, was located in the province of Canterbury on an alluvial plain sloping for 60 kilometers from the Pacific Ocean to the foothills of the Southern Alps.

The founders' specific intentions can only be surmised, but significant clues exist. First, the early promoters stressed the concept of a college as the "provincial edifice of education and culture." Second, the initial three chairs (departments) and academic subjects suggest educational priorities: chemistry; the classics, history, and English literature; and mathematics and natural philoso-

phy. The Provincial Council Ordinance of 1873, dated June 16, 1873, is identified as the beginning of the college's legal existence. It stated that the college was "to provide a regular and liberal course of education."

For the following two decades, the board of governors was the provincial authority in most fields of education above the primary level. Their function was to manage an estate, maintain the number of institutions, and control the staffs. The 1873 reality was that the board of governors was the colony's largest landlord. Rental income totaling £3,000 came from the lands of poorer quality in the high country. In addition to Canterbury College, the board was responsible for the Canterbury Museum (1873-74), Canterbury Public Library (1873-74), Christchurch Girls High School (1876), Christchurch Boys High School (1877), Canterbury School of Agriculture (1873-80), and the School of Art (1879-80).

During the first two terms (June-November 1874), five part-time lecturers taught biology, modern languages, mental science (philosophy), jurisprudence, and political economy (economics). Three of these lecturers, an additional lecturer, and three young professors appointed as chairs (heads of departments) comprised the staff for the first full teaching session in 1875. Alexander William Bickerton (age 32) came from the Royal School of Mines (London) as the first professor of chemistry; John Macmillan Brown (age 28) from the University of Glasgow (Scotland) and Bailliol College (Oxford) became the first professor of classics and English; and Charles Henry Herbert Cook (age 29) as the first professor of mathematics and natural philosophy. This triumvirate became known as the college's foundation professoriate. They were paid £600 a year and could be dismissed at any time by the board of governors. It is said that these academic founding fathers were given "opportunities and functions which could never be repeated—the glories (and the perils) of a pioneer." The three offered complementary gifts: Bickerton gave promise of something approaching scientific adventure; Macmillan Brown, of lifting study to the level of an intellectual crusade; Cook, of an ability to hold the college to fundamentals, and to a sense of balance.

Students came, but with different skills and expectations than the founders had imagined. The initial 83 students arrived from provincial schools for part-time, late afternoon, and evening classes. Instruction was elementary; only a small percentage of the students were capable of matriculation or entered with the academic preparation suited for university study. Initially it was necessary to accept a majority of fee-paying students who were incapable of matriculation. Soon afterward, high schools



University of Canterbury

which could prepare students for a scholarly education were identified as feeder schools Christchurch Boys High School and Christchurch Girls High School were the primary feeders, while students from Christ College matriculated while still in high school. It was not until 1888–89 that matriculated students (165) outnumbered non-matriculated students (153).

Women attended on equal terms with men. In 1876 Helen Connon was the first matriculated female student to begin a degree course. In 1880 Connon and Anne J. Bolton received their bachelor of arts degrees; Connon is considered the first woman to win honors in the British Empire. Connon, who later served as headmistress (principal) of Christchurch Girls High School (1883–94), married Macmillan Brown in 1886.

Development of the government, staffs, classes, sites, and buildings of these institutions was piecemeal over the initial five years. Local architects, including Benjamin Woolfield Mountfort, who had designed the Canterbury Museum, submitted designs for the college buildings. However, extensive controversy prevailed, and physical development was slow.

Francis William Chapman Haslam arrived in 1880 to replace Macmillan Brown as chair of the department of classics. In vivid contrast to Macmillan Brown and his academic fervor, Haslam was a strong advocate of residential halls, an early promoter of student sports, and the founder of the Canterbury College Football (soccer) Club. He considered the “gentlemanly pursuit of style and elegance” to be an important element of university study.

By 1886 the growing number of students required the board of governors to provide better facilities. The college buildings in the center of Christchurch had opened in 1877, replacing temporary structures of wood and corrugated iron on Worcester Street. A Men’s Cottage, nicknamed the Football Den, was provided in 1888; the first women’s residence hall, the Helen Connon Hall, opened in 1918. In 1992, the residents of Helen Connon Hall were given the right of complete self-governance rather than having a resident warden. This system remained in effect until 1954.

Students were involved in clubs and societies. Macmillan Brown began the Dialectic Society in 1878 as a debating club and initiated social evenings of concerts and plays. The 1880s were considered the “golden age of

drama," ■ tradition which continued with later professor of education James Shelley (1920–36) and honorary lecturer Miss (later Dame) Ngaio Marsh (1942–64).

By 1893, 375 students attended Canterbury College (176 women; 199 men) with four professional chairs; the department of engineering had been added in 1887. Eighty-six percent of the funding still came from rents from outlying properties, ■ financial resource unique to Canterbury. Canterbury had become the primary finishing school for teachers in response to the 1877 national policy of free compulsory education at the primary level and funding for public high schools, which created ■ great demand for teachers.

In the 1890s one of Canterbury's most distinguished graduates studied at Christchurch. During a year of post-graduate research prior to studying in Cambridge (England) on scholarship, Ernest Rutherford discovered his own scientific ability. Another significant graduate, Apirana Ngata of Ngati Porou, received his bachelor of arts degree on August 17, 1894. The first Maori graduate, he was honored at ■ centennial celebration in 1984.

After Macmillan Brown's departure in 1880, Canterbury's stature diminished. A new focus had to be established, and that was to be engineering. In 1894 three new chairs were introduced: engineering, biology, and modern languages. In response to the potential offerings in engineering, the Seddon government made a grant of £2,333 toward the building and equipping of an electrical engineering laboratory at the college. This grant signified a decision to locate the "special" school of engineering at Canterbury. The distribution of special schools throughout the university campuses was competitive: Canterbury and Auckland later vied for the forestry school; the medical school went to Auckland; new campuses for the agricultural schools went to Palmerston North and Lincoln; and architecture to Auckland.

In 1905, the training school for teachers was officially established at the college, continuing the trend for more general education rather than for scholarly degrees imagined by its founders. Enrollment dropped, reflecting the increasingly dense population in the north island. Enrollment did not rise significantly again until after World War II. Physical development was slow and funding for development scarce. The faculty initiated a fundraising drive in 1913 "to give the College what is most needed, ■ separate and adequate library." The drive brought in £1,760. The new library opened in 1916 and provided ■ greatly needed structure in the academic quadrangle.

Even though a professional board had been established in 1875, it was not until 1922 that the professorial board had direct representation on the board of directors of the college. The dominant presence of absentee upper-middle class volunteer academic men on the board of governors had slowed the pace of development, advancement, and academic excellence. The voices of the academic staff were not being heard.

The 1930s witnessed a decrease in the number of students from nearly 1,000 in 1925 to 780, with an accompanying decline in university spirit. In 1933 the college was renamed Canterbury University College. This name change was perhaps a forewarning of the ending of the provincial First Era of the college. Its primary financing no longer came from its landholdings, and it became more dependent on other sources of funds. The last construction of a permanent building had been in 1923; high priority given to the expansion of the library in 1936 was not fulfilled for 40 more years.

The academic reform sparked in 1939 resulted in the formation of the joint council of the professional board committee in 1944. They were to examine the postwar needs of the college. The end of this First Era—the first 75 years of existence—is cited as 1948 when the engineers supported the idea of ■ larger campus. The possibility of splitting the college into two locations was considered; conflicting views were heard about the advantages and disadvantages of expansion of the existing center city campus versus a major move of at least part of the college to a more rural site. A search was begun for a site to accommodate the 2,534 students as well as the projected higher enrollments.

On June 18, 1949, almost 76 years after the opening of Canterbury College, the official announcement of the intention to move was made. The chosen location was in Ilam, ■ spacious suburban site seven kilometers away. The move would take place in stages from 1960 to 1974 with priority given to the building needs of the School of Engineering.

However, the November 1949 defeat of the Labour government significantly affected academic development and planning throughout New Zealand. The educational priority was to house primary school children. Cutbacks were to the detriment of education; salaries were reduced and development curtailed.

Critics maintain that the academic value of the move to Ilam was scarcely mentioned. No comprehensive planning had been done and neither the professional board nor students had been consulted. In 1952, the staff expressed their dissatisfaction with the plan to move, for they feared a loss of academic excellence with the projected enrollment of 8,000 students on the 76-hectare site at Ilam. A well-attended, lengthy Association of University Teachers meeting was held on June 18, 1953. The academic staff voiced intense exasperation, but no formal recommendation resulted.

Progress continued slowly. In 1955 a reaffirmation of the plan to move was made, and plans were approved for the School of Engineering. The grounds would be developed in three main blocks: engineering, science, and arts/library. In 1957 the Canterbury University College was renamed the University of Canterbury. The modern buildings on the Ilam campus encompass approximately 155,000 square meters in a park-like setting.

In 1960, John Angus Erskine, a Canterbury College graduate in the 1890s, made a bequest to the university which established the Erskine Fund. This funding has enabled Canterbury staff in the fields of science, engineering, and commerce to study overseas and allowed academic visitors from overseas to come to Canterbury.

In 1961 the federal system of universities was dissolved, and the University of Canterbury became fully autonomous. During this time, Margaret Mahy graduated (1958) and became one of New Zealand's foremost writers for children and teenagers. She has received awards and acclaim for her more than 100 books. In 1993 she received an honorary Doctor of Letters (Litt.D) at the graduation ceremonies.

In celebration of the 1973 centennial and to express its gratitude to the city of Christchurch, the university presented the former downtown site and buildings to the Arts Centre of Christchurch Trust. These gifts to the community are now being used as a community arts center, theaters, galleries, craft rooms, and offices for community organizations.

In 1974 the Ilam campus was completed, although further construction continued for the next two decades. The reduction in national funding drastically increased the need for research and grants. As a centennial project for the School of Engineering, the Centre for Advanced Engineering was established in 1987 to undertake projects that would enhance engineering knowledge in the areas of national concern.

As another example of research, the Macmillan Brown Centre for Pacific Studies and the Macmillan Brown Library were established in 1983 as a bequest from Professor John Macmillan Brown, the foundation professor of classics and English. His four endowments offer research and visiting scholar programs to international scholars of Pacific societies and culture.

To celebrate the centennial of the Students' Association established in 1894, the Students' Association is now housed in a new Students' Union at Ilam. This union is a long-sought gathering place for students with a cafeteria, ballroom, and conference center. It also contains a 420-seat theater named for Dame Ngaio Marsh, an honorary lecturer in drama at the college in the 1940s. Marsh produced Shakespearean plays for sold-out audiences in Christchurch and other New Zealand and Australian theaters and instituted production courses at the college. A well-known author of detective novels, she received the Order of the British Empire (OBE) in 1948.

The Students' Union was initially funded by a student-initiated levy to help provide student services and is completely controlled by the Students' Association. Membership in the association is compulsory for enrolled students. The Association built the first specially designed day-care center in a New Zealand University and owns one-half share in the University Book Shop.

The current charter of the University of Canterbury

requires the university "to advance knowledge by research and to maintain and disseminate it by teaching." This research function provides opportunities for scholarly studies, scientific investment, and solutions to practical problems.

In 1993, during the 99th year since Apirana Ngata was the first Maori graduate at Canterbury College, Keith Ikin was named the first Maori liaison officer at Canterbury. He was assigned to work with Maori secondary school pupils, arrange orientation programs, and assist in specific departments in Maori concerns. In addition, a bicultural council named Kaunihera Tikanga Rua first met in late 1993 with the intention of advising the vice chancellor on bicultural development and cultural awareness in the university.

The Ilam campus was developed to accommodate 8,000 people. However, by 1993 it was as serving 11,000 students and 1,200 staff. In 1993 the law building opened, housing two floors of the new law library.

In addition to continuing physical development, the university remains committed to extending the educational opportunities to the community. Among its offerings are the non-degree community education courses, certificate courses, Elderhostel programs, and cultural events. In addition, lay people are involved in the governing bodies, professional associations, and review bodies.

Thus, the three guiding principals for the initial Canterbury College are still primary concerns for the contemporary University of Canterbury. Is higher education accessible? Is the university assisting institutions which serve the community? Are talents encouraged without barriers of distance, wealth, or class? In the words of Ian Leggat, the current chancellor of the university, "In the hard work and academic endeavours of staff and students 'liberty, light, and learning' [Disraeli's words] continue to flourish."

Further Reading: In honor of the university's centennial, N.C. Phillips edited a collection of historical essays: *A History of the University of Canterbury, 1873-1973* (Christchurch: University of Canterbury, 1973). Of special note are three contributions: W.J. Garner's "The Formative Years, 1873-1918," E.T. Beardsley's "Augustan Repose, 1918-1948," and T.E. Carter's "College into University, 1949-1973." Professor R.N. Tarling's introductory essay on New Zealand in *The Commonwealth Universities Yearbook, 1994* (London: Association of Commonwealth Universities, 1994) discusses the New Zealand university system in general and each university in specific detail. Two publications, *University of Canterbury—Guide to the Campus* (Christchurch: Printery, University of Canterbury, 1994) and *University of Canterbury—1993 Annual Report* (Christchurch: Printery, University of Canterbury, 1993) cover current issues and developments.

—Christine Farrow

UNIVERSITY OF CAPE TOWN

(Cape Town, South Africa)

Location:	In Cape Town.
Description:	An open university enrolling approximately 14,497 students in undergraduate, graduate, and professional schools.
Information:	Office of Admission Bremner Building Lover's Walk Rondebosch 7700 Cape Town South Africa (21) 650-2128
Visiting:	Guided tours are available. For more information, contact the Office of Public Relations at (21) 650-3743.

The University of Cape Town, founded in 1829, was an educational venture by the Dutch and British citizens of South Africa, who had two ambitions for this institution. The first was that it be South African in its "fullest sense," a goal which it would take well over 150 years to begin to achieve. The other ambition was "to become a university as good as the best anywhere." This ambition has been more fully met—as evidenced by the academic reputation of the university over the past century. The university is currently embarked on a course to fulfill the first aim: to represent all of South Africa in its student body, its programs, its faculty, and its staff.

The University of Cape Town (UCT) is one of the oldest educational institutions in sub-Saharan Africa. It began as the South African College, a private venture of Dutch and British citizens. The small, private school consisted of three educational levels: a primary school for the early years of education, a secondary school for work at the pre-college level, and a small university section. By 1874, the lower classes of the college were severed from the university section. They were formed into the South African College schools. The university component of the South African College obtained its charter as the University of Cape Town in April 1918.

The newly chartered UCT entered the twentieth century with a school of medicine, engineering courses, a library, and a women's residence in addition to offering its previous college-level courses. The campus was settled on Groote Schuur, the estate of Cecil Rhodes, a British statesman and business magnate. Six hundred

students made up the UCT's enrollment in its initial year of 1918. In 1995, enrollment was over 14,300 students. From a single library the UCT built and maintained the Jagger Library which, together with its extensions, holds over 824,000 volumes and 7,400 journals. University faculties expanded to include impressive programs in ten faculties: arts, commerce, education, engineering, fine art and architecture, law, medicine, music, science, and social science and humanities.

But the twentieth century also saw the growth of South Africa's apartheid rules, designed to legally segregate white South Africans from blacks and those then designated as coloureds. Apartheid split the country apart—allowing banishments and detentions without trial, creating separate homelands for blacks, and making education virtually impossible to obtain for the majority of the population. Apartheid laws had serious and long-lasting implications for the UCT. Before South Africa made its difficult transition to democracy in the 1990s, UCT admitted black African and coloured students in small numbers up until the 1950s; however, the University Extension Act changed that.

In March 1957, the Afrikaner-led National Party, which set up an efficient state apparatus to implement laws of apartheid, introduced the Separate Universities Education Bill. The object of the bill was the "closing of the open universities to non-white persons" according to the Academic Freedom Committee (AFC) of the UCT. The bill was dropped, and a later bill, the Extension of University Education Bill, was introduced before the South African Parliament on February 26, 1958. Despite opposition from the United Party and the Native Representatives, it passed into law. According to the AFC, "The Extension of University Education Act 45 of 1959," as it was named, effectively segregated the already primarily white universities by prohibiting any blacks who were not already enrolled to participate in the white universities as students.

The University of Cape Town firmly protested the Extension of University Education Act and its segregation policies. Not only did UCT students stage a large protest march through the center of Cape Town in 1959, but students protested outside of Parliament while the bill was being debated. Just as members from constituent bodies at the UCT pledged themselves at mass meetings "to continue to defend the ideal of the open university," so did the UCT chancellor and other high-ranking administration members sign a protest against the act at a meeting held on July 29, 1959. The protest read, in part:



University of Cape Town

We dedicate ourselves to the tasks that lie ahead: to maintain our established rights to determine who shall teach, what shall be taught, and how it shall be taught in this University, and to strive to regain the right to determine who shall be taught, without regard to any criterion except academic merit.

The government's attacks on the university broadened from exclusion of black students to more comprehensive restrictions on freedom of expression; accordingly, the volume of protest increased. In 1960, Professor C.W. Kiewiet spoke out in his T.B. Davie Memorial Lecture at UCT: he urged university members to "go beyond freedom to pursue knowledge for its own sake, and claim for scholarship today a greater and freer role in relieving mankind of inequality, injustice, deprivation, fear, ignorance, or anger." The task of the university, many believed, was to reach out to reform South Africa itself.

In 1961, the UCT initiated a triennial public lecture called "The Chancellor's Lecture." In contradiction to the Extension of University Education Bill, the lecture series pledged itself to uphold the principals of an open university: the education of women and men of all races. Distinguished lecturers in this series included Lord Butler, Master of Trinity College, Cambridge (1969), and the historian Dr. Leon Marquard (1973).

Yet lectures, protests, and remarks carried out by the UCT to protest restrictions on academic freedom may be overestimated when viewed in contrast to its real admissions practices for blacks, coloureds, and Asians well before the University Extension Act of 1959. In 1959—when the University Extension Act was made law—there were 39 black African students enrolled at the UCT, as opposed to a white enrollment of 4,471 students. However, many within the UCT as well as without did not hesitate to speak out about what they saw as the "true role" of the UCT. Humphrey Harrison served as the vice-president of the Students' Representative Council (SRC), the senior representative student body, from 1976 to 1977. According to Harrison, the UCT retained its position as ■ training ground for the white elite. The University of Cape Town, he wrote, "is often the natural progression for white matriculants of parents in the upper-middle income bracket, and few have ever had to work for a living or shoulder any responsibility. . . . From the protected environment of home and a fashionable school we move straight to the isolated and even cosseted sanctuary of a white university."

Yet that situation could not last; as South Africa moved toward a multiracial society, so did the UCT. After decades of civil unrest, an organized protest movement, and international sanctions, the apartheid laws that officially segregated the country were lifted. South Africa, which saw the imposition of ■ state of emergency in 1986, moved into a period in the 1990s during which F.W. de Klerk, elected president in 1989, ended the state of emergency, removed

the ban on anti-apartheid political parties including the African National Congress (ANC), and released ANC leaders including Nelson Mandela, who would become the first black president of South Africa. Apartheid laws were repealed in 1991. In 1992 then-president of South Africa de Klerk and black leaders undertook negotiations leading to a transition to democracy in 1994.

Just as 1994 was the year of South Africa's transition to democracy, so teaching, research, and community service remained at the center of the UCT; but if one considers the actions of unity that took place at the UCT that year, it is clear the university was also moving into a new phase of its existence. "On May 13," reads the Vice Chancellor's Report for 1994, "we raised the new flag above the Jameson Hall . . . On July 20 we re-lit the Torch of Academic Freedom—34 years after it was extinguished in protest against the Extension of University Education Act." Because the emergence of a new South African site meant the development of ■ vastly different country, the UCT dramatically altered its policies on student admissions and support and in some cases, began to adapt curriculum to reflect the new nation.

Rather than resist the new climate in South Africa by maintaining a largely white student body, the UCT aggressively stepped up its outreach to black Africans, coloureds, Indians, and Asians: for the first time in its history, 1994 saw black students comprising a majority (52 percent) of the university's new enrollments. The figures, as documented in the Vice-Chancellor's Report for 1994, are as follows: 28.3 percent African, 16.8 percent coloured, and 6.8 percent Indian. The vice-chancellor attributes the shift in student enrollment to "desegregation strategies" initiated by the UCT during the 1980s and the 1990s. In his report he notes:

Of the first year African students in 1994, about half were admitted via our special admissions programme. This access route takes the form of a test designed by our Alternative Admission Research Project (AARP), to measure an applicant's potential to succeed rather than his/her past educational experience. The tests are in the areas of language and mathematics, and offer students an opportunity to demonstrate their capacity to come to grips with information and use it.

The alternative admissions program is offered at 15 centers across South Africa. The vice-chancellor notes the results of the program up to 1994: "At the end of 1994, 1,609 students wrote the AARP tests, and 503 were recommended to faculties or admission in 1995." There is, he notes, a high correlation between the test results and a student's success at the UCT.

To assist students who have been admitted to the UCT from educationally disadvantaged backgrounds, the university developed the Academic Support Program (ASP),

which is an inter-faculty teaching and research unit whose aims include “providing access to the University for talented but unprepared black students who do not meet standard admission criteria.” A UCT document states: “In selecting students, we recognize that South Africa’s racially segregated primary and secondary education systems are unequal in many respects. The school systems that cater for the majority of those classified ‘African,’ ‘Coloured’ and ‘Indian’ do not match the predominantly white school system.” Once the students are in the university, the ASP works through a variety of programs to help those from “disadvantaged backgrounds to realise their academic potential.”

The Academic Support Program has developed an array of “foundation or bridging programs,” from introductory and augmented courses offered by the UCT departments as options to traditional first-year courses, to intensive tutorial programs in the arts, social science, and humanities faculties, through student preparation for the UCT’s science, engineering, commerce, and medicine faculties, and even language development programs. The ASP was reconstituted as the Academic Development Programme (ADP) in 1994; in that year, it had more than 40 full-time staff and numerous part-time tutors.

While the Alternative Admissions Research Project and the Academic Development Programme have been implemented to change the composition of the UCT’s student body to reflect the diversity of South Africa, the integration of the UCT’s staff has been slow. In fact, while more women and people previously classified as coloured occupy administrative positions, according to a UCT document, they along with Indians and Africans are “underrepresented in differing degrees of different sectors” of the staff. As of 1993, fully 94 percent of the professors and associate professors were white, while 3 percent were African. Women made up 22 percent of the professorship. Apartheid as a social and legal phenomenon may be in South Africa’s past, but “its legacy,” a UCT document states, “lingers on.”

Just as the dismantling of apartheid put new demands on the UCT’s enrollment policies, so it put new demands on the UCT’s academic programs and research aims. The university’s academic programs have expanded to include subjects that reflect South African concerns. As of 1994, the UCT saw the institution of its Law, Race and Gender Research Institute. In addition, the UCT saw the faculty of science produce a document which demonstrated “the relevance of scientific research to improvements in the

quality of daily life—ranging from access to a safe water supply to employment, health, and educational opportunities.” Further, a Traditional Medicines Programme (TRAMED) was established as a new academic program. Part of the department of pharmacology, Tramed was established in 1994. Its goals include ■ “traditional medicines database for the Southern African region” and “access to traditional medicines information by researchers and traditional healers.”

The implementation of these new academic programs and research initiatives reflect the hopes raised by Conor Cruise O’Brien while he was vice-chancellor of the University of Ghana. O’Brien called for the “liberation” of the African university “whose main and virtually sole function was to pursue European studies and disseminate European knowledge in Africa. . . . In transcending that narrow concept and in becoming more fully part of its environment, an African university becomes not merely more fully African but also more fully a university.” New research initiatives reflect that hope.

Such changes in research, administration, programs, and student enrollment show the UCT to be a complex institution that echoes the words of its British and Dutch founders in a different, wider context. As the UCT enters the twenty-first century, there is a different, broader tone to its originally stated goal: “to be South African in its fullest sense” means that the university works to make itself ever more relevant in South Africa’s changing world.

Further Reading: *The Open Universities in South Africa and Academic Freedom* compiled by the Academic Freedom Committees of the University of Cape Town and the University of Witwatersrand, Johannesburg (Cape Town: Juta, 1974) is a book-length study detailing the impact of the Extension of University Education Act and the response of the open universities. Sections on the concept of academic freedom, freedom of expression, and the international community give ■ comprehensive picture of the UCT. *UCT at 150* edited by Alan Lennox-Short and David Welsh (Cape Town: David Philip, 1979) offers ■ wide range of recollections, commentary, and critiques on all aspects of the UCT. Its faculties, student life, policies, and people are dissected and discussed in essays by a member of the UCT council, a senior lecturer in history, and ■ planning officer in the UCT administration, among others.

—Rosemarie C. Sultan

UNIVERSITY OF CHICAGO

(Chicago, Illinois, U.S.A.)

Location: The University of Chicago is located in the Hyde Park neighborhood of Chicago, seven miles south of the central business district, called the Loop. The 190-acre campus is situated on either side of the Midway Plaisance that connects Jackson and Washington Parks, and is just blocks away from Lake Michigan. The university is accessible both by car and public transportation.

Description: The University of Chicago is a private, coeducational, nonsectarian institution that opened in 1892. The university consists of an undergraduate college, graduate programs in the arts and sciences, and graduate schools in law, business, medicine, education, and the ministry. The university enrolls close to 10,000 students annually, including approximately 3,500 in the undergraduate college. More than 1,200 full-time faculty members teach and conduct research at the university. The university combines an emphasis on broad liberal arts education in its college with graduate schools known worldwide for high-quality research.

Information: The University of Chicago
5801 S. Ellis Avenue
Chicago, IL 60637
U.S.A.
(773) 702-1234

Visiting: The University Visitor Center is located on the first floor of Ida Noyes Hall, 1212 E. 59th Street. The center offers guided tours, maps, and schedules of university events. The office is open from 8:30 A.M. to midnight, Monday through Friday; 10:00 A.M. to midnight on Saturday; and 1:00 P.M. to 10:00 P.M. on Sunday. The center offers tours to the general public on Saturdays at 10:00 A.M., except on major holidays. The tours leave from Ida Noyes Hall. Metered parking is available in the guest lot just north of Ida Noyes Hall; enter the lot from Woodlawn Avenue between 58th and 59th Streets. For further information, call the Visitor Center at (773) 702-9192.

The University of Chicago was founded under Baptist auspices in 1891 as a private, coeducational, nonsectarian institution of higher learning. The impetus for founding

the university came when the Baptist Education Society, a group of American Baptist ministers, convinced Standard Oil magnate John D. Rockefeller, himself a Baptist, of the need for a Baptist institution in the midwest. There had been a Baptist university previously in Chicago, also called the University of Chicago. It was founded by Illinois senator Stephen Douglas in 1857 as a Baptist mission school. After several financial setbacks, however, the school was forced to close its doors in the spring of 1886. Leaders in the Baptist community then began their efforts to found a new institution that would take the place of the old University of Chicago but also would be larger in scope and scale.

Thomas Wakefield Goodspeed, a faculty member at the previous University of Chicago and a prominent Baptist minister in Chicago, was a central figure in the founding of the university. He helped secure William Rainey Harper, a prominent Semitics professor at Yale, as the first president of the university. Harper impressed upon Rockefeller his desire to establish a prominent research university, not just an undergraduate college, in Chicago. Harper and others argued that the midwest needed a Baptist institution to foster higher learning in the region. Many Baptists, however, feared that the creation of a large-scale university devoted to scientific research would undermine the missionary spirit of the Baptist Education Society. Yet the founders of the university, and especially Harper, saw scientific inquiry as a means through which to unlock the mysteries of the universe and come closer to God. Science would therefore be used in the service of religion in the quest for truth, they argued.

Harper modeled his educational plan for the new university on the German university ideal. He wanted to establish professional and graduate programs devoted to research and scientific inquiry, thereby creating a center for advanced scholarship that would be respected worldwide. Harper and other founders were careful to note, however, that the University of Chicago would not be an ivory tower. Rather it would use scientific inquiry as a means to study problems of society and solve them based on these findings. The city of Chicago would serve as a laboratory in which scholars and students would make their investigations and formulate their conclusions.

Indeed, the university's charter stipulated that the school must be located in the city, so the Baptist Education Society selected Hyde Park, one of the neighborhoods on the south side of Chicago annexed in 1889, to situate the new school. Retail merchant Marshall Field donated ten acres for the original campus and later sold the university additional land as it expanded. Architect Henry Ives Cobb



University of Chicago

designed the Gothic Revival campus in the image of Oxford and Cambridge, with the enclosed quadrangles creating a feeling of insularity and detachment from the surrounding city, which the board of trustees hoped would foster a tight-knit community of scholars.

The university opened its doors on October 1, 1892, with an initial enrollment of 594 students and 103 faculty. The university opened at the same time that the World's

Columbian Exposition fairgrounds were being constructed in Jackson Park, just south of the campus. When visitors attended the exposition in the summer of 1893, they could ride the Ferris Wheel located on the Midway Plaisance and get a glimpse of the burgeoning campus to the north. The neo-classicism of the White City, as the exposition designed by Chicago architect Daniel Burnham was called, contrasted sharply with the grayness of

the Gothic campus, leading many observers to comment on the sense of tradition and seriousness inspired by the use of Gothic architecture.

President Harper hired some of the most well-respected scholars from colleges and universities across the nation and the world to fill his new faculty. John Dewey, George Herbert Mead, and James H. Tufts helped establish the distinguished philosophy department. Dewey, also a leading theorist of pedagogy, worked with Harper to establish the university Laboratory Schools in 1896. The Laboratory Schools brought together several elementary and secondary schools in the city and incorporated them within the university. The Lab Schools, especially the University Elementary School founded by Dewey, employed Dewey's progressive theories of education, which stressed the need to relate teaching methods directly to children's experiences and make the teaching process ■ symbiotic one between teacher and student. The consolidation of education that Harper sponsored gave the university a complete educational system from kindergarten through graduate school and became an important influence on educational reform throughout the nation.

The university also established the first department of sociology in the United States. Scholars such as Albion Small, and later Ernest Burgess and Robert Park, made the sociology department one of the most influential in the nation, as the "Chicago School" pioneered research in immigration, race and ethnic studies, and urban community studies. Chicago sociologists compiled vast amounts of data on various regions in the city and used the evidence from their field investigations to produce richly textured studies of urban life. These studies often formed the basis of social policy and were crucial in aiding institutions such as the Chicago Juvenile Court in understanding the backgrounds of their clients. Scholars in social science departments worked closely with Chicago reformers such as Jane Addams, Florence Kelley, Graham Taylor, and Mary McDowell, who became head resident of the university-sponsored settlement in the neighborhood known as Back of the Yards, because of its proximity and ties to the stockyards. The university played ■ central role in linking the emerging disciplines of the social sciences with urban reform activities and municipal government in Chicago.

From the start, President Harper sought to expand the role of the university in the city. He launched the University Extension Program, the first in the United States. This program allowed nonenrolled students, particularly adults in other parts of the city, to take courses part-time and off-site. University faculty taught these courses, often in the evening, at libraries, churches, and union halls. Harper also sought university affiliation with other institutions in the city, including Rush Medical College, the Chicago Theological Seminary, the Chicago Institute Teachers' College, the Chicago Manual Training School,

and the YMCA. This program of extension and affiliation gave the university a prominent role in shaping intellectual life in all parts of the city.

When Robert Maynard Hutchins became university president in the 1930s, he continued this practice of linking the university to civic life throughout the city and even the nation. Hutchins launched the "Great Books" program, which brought together university faculty with city elites to read and discuss classic texts of western civilization. Soon librarians and public school teachers were trained to lead discussions, making the program more accessible and widely available throughout the city and later the nation. Hutchins also emphasized educational reform, and introduced his "New Plan" for the college curriculum in 1931. This plan established a core curriculum for general undergraduate education based on survey courses in the arts and sciences. This plan has been a model for other institutions across the nation as they adopted core curriculum requirements for undergraduate education.

The university also took advantage of changing technology to take ■ leading role in shaping the exchange of ideas. The first "round-table" discussion of public issues on radio took place on February 4, 1931, with three University of Chicago professors discussing prohibition. The success of the format led NBC to air the program nationwide on Sunday afternoons. By 1951, the "Round Table" was carried by over 100 radio stations and had the largest national audience of any discussion program. The university soon employed the radio, and later television formats, to broadcast noncredit courses in the humanities, bringing the work of its faculty to broader audiences.

The university's physical science departments earned reputations of distinction from the time of their founding. Scientific investigation had been one of the central features of the early university, and through the first decades of its existence, university faculty engaged in field research both in and away from the main campus. Biologists traveled to Woods Hole, Massachusetts, to conduct research at the Marine Biological Laboratory, botanists collected samples on the shores of Lake Michigan, and archaeologists journeyed to the Near East to participate in digs. These research trips led prominent university archaeologist James Henry Breasted to establish the Oriental Institute as a center for the collection and interpretation of the cultures of the Near East. The Institute, founded in 1919, acquired most of its museum collections as a result of archaeological excavations sponsored by the university, illustrating the intimate connection between research and museum exhibition at the Institute.

The physics department could boast the university's first Nobel laureate, Albert A. Michelson, who won in 1907 for his measurements of the speed of light. Two more physicists won the Nobel Prize in the 1920s—Robert A. Millikan (1923) and Arthur H. Compton (1927). The department gained new prominence after atomic bombs

fell over Hiroshima and Nagasaki in 1945. Led by physicist Enrico Fermi, a team of scientists at the university initiated the first self-sustaining nuclear reaction under the football stands at Stagg Field, near the center of the university. The "Manhattan Project" launched a new partnership between the federal government and the university that shaped the future of scientific research. The university soon launched efforts to improve scientific investigation that would be useful to government and industry, and built several laboratories in conjunction with government and corporate sponsors, including the Argonne National Laboratory and the Enrico Fermi Institute. The university worked with NASA to build the Laboratory for Astrophysics and Space Research, linking university research with government-sponsored space flights.

At the same time that the Manhattan Project was bringing national attention to the university, student enrollment was declining, largely as a result of changing neighborhood conditions in Hyde Park. Economic and demographic changes, particularly the expansion of the "Black Belt" into Hyde Park, led many wealthier white residents to leave Hyde Park. Many property owners subdivided homes and became absentee landlords, often neglecting building upkeep and maintenance. By the early 1950s the university faced a 60 percent drop in student applications, and had trouble recruiting new faculty. In order to revitalize the neighborhood and ensure the continued prominence of the university, trustees and administrators worked with local residents to create the Hyde Park-Kenwood Community Conference. Members promoted urban renewal policies to address issues of crime, poverty, racial integration, and planning. The plan for redevelopment, approved by federal, state, and city governments, called for demolition of older, substandard buildings and the construction of new apartments, townhouses, and shopping areas. The cost for the entire redevelopment project, started in 1955, was over \$300 million, with \$46 million coming from the federal government, \$29 million from the university, and \$250 million from private investors. Several thousand residents were displaced in the process, but the partnership between the university and local residents became a model for promoting interracial and economically stable urban communities. The relative success of the urban renewal project enabled the university to maintain its

reputation as one of the leading research and teaching institutions in the nation. Additional federal and private investment in the 1980s allowed the university to expand the scope of its research, especially in the physical sciences. Similarly, the university hospitals took on greater prominence in the 1970s and 1980s as other areas hospitals were forced to close their doors. The university maintains a strong presence in city affairs and public policy, and provides expertise in areas as diverse as legal aid, tax policy, housing, education, job training, and medicine. The university continues to combine its goals of rigorous research and teaching with its role in applying that research to the practical needs of the community and the nation.

Further Reading: There are several books that provide good histories of the founding of the University of Chicago. The best overviews are *A History of the University of Chicago: The First Quarter-Century*, by Thomas Wakefield Goodspeed (Chicago: University of Chicago Press, 1916; 1972), *Harper's University: The Beginnings*, by Richard J. Storrs (Chicago: University of Chicago Press, 1966), and *Hutchins' University: A Memoir of the University of Chicago, 1929–1950*, by William H. McNeill (Chicago: University of Chicago Press, 1991). The university published a series, "A Centennial View of the University of Chicago," in honor of its 100th anniversary in 1992. For a discussion of student life and athletics at the university, see *Stagg's University: The Rise, Decline, and Fall of Big-Time Football at Chicago*, by Robin Lester (Urbana: University of Illinois Press, 1995). Books dealing specifically with the social sciences and their role in city affairs include *The Chicago School of Sociology*, by Martin Bulmer (Chicago: University of Chicago Press, 1984), *A City and Its Universities: Public Policy in Chicago, 1892–1919*, by Steven Diner (Chapel Hill: University of North Carolina Press, 1980), and *The Chicago Pragmatists and American Progressivism*, by Andrew Feffer (Ithaca, New York: Cornell University Press, 1993). Books discussing the relationship between the university and the neighborhood of Hyde Park include *A Neighborhood Finds Itself*, by Julie Abrahamson (New York: Harper and Row, 1959), and *Making the Second Ghetto: Race and Housing in Chicago, 1940–1960*, by Arnold Hirsch (Cambridge: Cambridge University Press, 1983).

—Robin F. Bachin

UNIVERSITY OF CHILE

(Santiago, Chile)

Location:	Santiago de Chile, with campuses in various parts of the city.
Description:	Public university with approximately 18,000 students, undergraduate and graduate, and 5,000 faculty.
Information:	Universidad de Chile Avda Bernardo O'Higgins 1058 Casilla 10-D Santiago Chile (2) 6781003

The University of Chile (UCH) stands as one of the crowning institutional achievements of nineteenth-century Chile: it organized and supported education at all levels, was the center of the country's intellectual life, introduced scientific knowledge, helped establish the professions, and formed one of the region's more enlightened and successful ruling classes. The foundation of Chile's other universities, starting in 1888, did not significantly lessen the UCH's importance over the next 100 years. The university continued to hold a near monopoly over intellectual life until the late 1920s and, even today, the UCH sits at the system's pinnacle. It produces half of all Chile's research, leads all universities in graduate education and the arts, and is still regarded as the national university within a system widely heralded as the model for Latin America. Indeed, the UCH is routinely included in any informed listing of the handful of the region's best universities.

The University of Chile was founded in 1842, during the administration of President Manuel Bulnes. It was not Chile's first university, however, The Royal University of San Felipe started functioning in 1757, and religious institutions of higher education existed before that. The Royal University (closed in 1839, shortly after the end of the colonial era) was one of the institutional bases upon which the UCH formed, but the new university would not be a mere extension of it. Under the leadership of Diego Portales, the newly independent government gained a stability and authority envied elsewhere in Latin America. This climate was propitious for the influx of many of the region's educational innovators, who were often inspired by European liberalism, the Enlightenment, and European university structures and practices. They supported public education against clericalism, and later in the cen-

ture joined with Chilean intellectuals who heralded the positivist ideology that helped reinforce state over church influence in education. Venezuela's Andrés Bello was a key figure in creating the UCH (*La Casa de Bello*, Bello's House), which of which he became the first rector. He is still widely cited throughout the region for his advocacy of the enlightening purposes of higher education and its service to the nation.

The University of Chile was founded to aid the developing nation-state in its efforts to modernize a traditional society, reinforce a sense of national cohesion, and serve capitalist modernization. Centralized and uniform public education was seen as the instrument that would foster such change, and the UCH was designated to lead the effort. This is why the UCH was designed to be the superintendent of education and a scientific academy, not a teaching institution. This design was similar in neighboring Argentina and Uruguay; the *Estado Docente* (Teaching State) would rely on the national university as its education arm. The teaching of the professions would continue to take place in Chile's National Institute, created after independence to assume the teaching mission of the colonial university and the seminaries. In its superintendent role over education, the UCH had the authority to grant the higher degrees of bachelor and *licenciatura* (first higher education degree, valid usually for professional practice), give exams for and certify the completion of secondary education, direct public education, and inspect both public and private educational institutions.

As the UCH was less a teaching institution than a scientific academy, its model was the Institute of France more than any university. The five original faculties or academies were philosophy and humanities, law and political sciences, theology, mathematics and physics, and medicine. They had 30 academics each and their tasks included the development of their fields, assistance to other institution's teaching, and advice to the government.

Over time, however, the UCH did in fact become predominantly a teaching institution. For one thing, scientific academies generally proved difficult to build securely in developing countries (though Chile's performance was far from the low end). For another, the UCH lost its supervisory role over secondary education. Catholic conservatives, raising the flag of freedom of teaching, led the charge against the UCH's authority. Although liberals prevailed in much of that bitter battle, a new law in 1879 reorganized the university according to its new teaching mission, and a trend was discernible regarding its supervisory role; by 1930, control had slipped away almost completely to the Ministry of Education.

But these losses did not usher in a period of decline, since the UCH developed such prominence in its invigorated teaching role. This teaching was oriented to preparation for professional practice, under the assumption that general education was provided at the secondary level—at least for the small minority that would enter higher education. The vast majority of the still fewer than 1,000 UCH students enrolled in the late 1870s studied the big three professions of law, engineering, and medicine. Another aspect of professionalism reinforced the teaching role: professional teachers gained power within an institution that achieved increased autonomy from the government.

The rise of teaching did not mean a one-dimensional enterprise. Ties to the professions were strong enough for the UCH to be dubbed, at least until the mid-twentieth century, a “professionalist” university. Moreover, the intention was more to join research with teaching than to exclude research. In the 1870s, rector Ignacio Domeyko (a Polish exile) promoted the Humboldtian idea of blending the two functions. Although the professionalist function became much more successfully institutionalized, the UCH achieved some research gains, mostly because of specific units or heroic individuals; in any case, the UCH certainly led in terms of what the nation was able to manage. Again foreigners and immigrants played a key role, above all in the exact and natural sciences. They also facilitated contact with leading institutions in Europe and the United States, and helped the modest development of laboratories and libraries. The *Annals of the University of Chile* earned praise for its scientific and educational articles over the years. Starting in 1954, a law earmarked 0.5 percent of national tax revenues to a fund created primarily for the construction of research facilities, and the UCH was given over half of the total.

A focus on research and (particularly since the 1950s) on the dream of blending it with teaching—a model now imported mostly from the United States—marked the crucial philanthropy that came from the Rockefeller and then Ford Foundations. It is revealing that Chile would become one of the very most favored countries for donors. This happened because Chile met so many of the criteria for giving. Most important was a desire for change combined with a reasonable chance of achieving it. While many elite private institutions elsewhere met the criteria, few national universities did. The rectorships of Juan Gómez Millas and Edgardo Boeninger epitomized the partnerships struck between the UCH and both foreign and domestic reformers. A joint project between the UCH and the University of California was the largest operation ever financed by the Ford Foundation in Latin America.

Another hallmark of reform, however, was expansion. This generally made it harder to build elite academic functions. For example, after years of building graduate programs and sending students abroad for advanced

work, less than 10 percent of university professors would have doctorates as rapid growth necessitated hiring many with lesser qualifications. Growth was a response to accelerated expansion of secondary school, a rising middle class, and beliefs that a modern democratic society needed to overcome its elite restrictiveness. Indeed, Chile trailed in access behind Latin American nations at similar levels of economic development. As late as 1960 only four percent of the cohort group was enrolled (one-third of the Argentine figure). By 1974 Chile had reached 16 percent. The University of Chile thus played a major role in the social mobility of middle-class groups, especially as it did not charge tuition, but mobility did not reach the popular sectors.

To respond to increased demand without watering down its academic standards, the UCH created (in the 1960s) regional two-year colleges, emulating the institutional diversification California was undertaking. Another UCH motivation was defensive: to preserve its institutional weight within higher education. The University of Chile was now one of eight universities. Its monopoly had ended with the creation of the Catholic University of Chile in 1888. Five more private universities followed and a public technical university opened in 1947. The regionalization of UCH was an alternative to the creation of more universities.

The University of Chile lost ground more slowly and limitedly than did the national university counterparts in sister nations. Not until the 1960s did Chile's other universities gain full rights to grant professional degrees without UCH authorization. And compared to other nations Chile avoided massive institutional proliferation—until the 1970s.

The massive and multiple changes that the UCH and the whole system have undergone in the last few decades must be understood in the context of the nation's wretched political-economic transformations.

The 1960s saw the rise of inclusionary democratic reform in national politics. In higher education, a potent reform movement also developed. It had its radical wings, but noteworthy were non-extreme features that set it apart from student rebellions elsewhere in the region; furthermore, the UCH was home to neither the birth nor the most extreme strongholds of the Chilean movement. The movement found ample support from the Christian Democratic government as well as from a majority of university administrators and professors. The general goal was to attune universities more to social change. That meant increased access, but also such intrauniversity reforms as replacement of hierarchical chairs and professionalist faculties with more participatory departments (which, in turn, would be suitable homes for mixing in more research with teaching). The measures paralleled those championed contemporaneously in Europe. And many were implemented at the UCH and other Chilean universities.

The reform was anathema to the military rulers who grabbed control of the country in 1973. By then, the reform had indeed fractured into disparate wings including very radical ones. Enrollments soared from 55,000 to 145,000 from 1967 to 1973. The 1970 presidential elections brought Salvador Allende's socialist coalition to office, with a minority of the vote and a shaky mix of democratic leftists and revolutionaries. While the president himself exhorted students to study, many in his coalition favored those students who believed that the only progressive course was revolution. The university reached a highly politicized state.

But the military was bent on reversing not only the extreme manifestations of the pre-coup period but the entire thrust of reform. Ideas like connecting the study of law to sociology and help to the poor were regarded as dangerous. So the government obliterated the autonomy enjoyed historically by the UCH and its counterparts. The University of Chile had in fact gained almost complete autonomy from the government despite receiving roughly 90 percent of its funds from it; professors (eventually joined by students) had elected all university authorities, and the authority of the president of Chile to appoint the rector had remained symbolic. Now, for the first time in Latin American history, military officers (usually retired) were appointed rectors. Units perceived as leftist were closed and purges expelled perhaps 20,000 students, 25 percent of the teaching staff, and between 10 to 15 percent of the administrative personnel. Participation in governance by professors was sharply reduced and student participation was proudly terminated. The ideological control made for what esteemed Chilean philosopher Jorge Millas called the "watched" university.

Repression was widespread but not uniform. Reflecting its importance and leftist movement, the UCH was hit hard from the outset, much more than the Catholic universities. Still, it was not whipped as much as either the public technical university or the private University of Concepción. Some protection came from UCH rectors who were rightist and vehemently anti-communist but not violently anti-democratic. They defended institutional interests with help from powerful alumni holding similar persuasions. Moderate deans could be yet more resistant to repressive measures. But, annoyed at its inability to effect more counter-reformation, the regime launched a second wave of terror in 1976. Now the attack extended beyond leftists to centrists.

Until 1981 the junta's thrust remained essentially toward destruction. This fit with its repressive orientation. It did not, however, fulfill the "neoliberal," free-market orientations championed by the economists who had the president's ear. They set out to construct a new system based on competition among institutions, private funding, and ties to the job market. They decried the non-competitive position that the universities enjoyed for so long, ensured by their legal monopoly over credentials and

their automatic incremental funding from the government. They denounced universities' inequitably disproportionate consumption of the education budget: 40 percent of the financing for 4 percent of the total students (regressively benefiting from subsidies drawn from the taxes of poor Chileans in need of better basic education). The University of Chile was the number one target of financial attack since it was the largest university, with the highest per capita costs, though defenders legitimately pointed out that high costs had something to do with the institution's unmatched activities in research and cultural extension.

Elements of the neoliberal agenda clashed with what some military hard-liners wanted. Suggestions of autonomy, or even an institutional self-financing that could indirectly promote autonomy, unsettled many. In other respects, though, the neoliberal and repressive approaches complemented one another. Reducing subsidies limited the role of the state and provided neat pretexts for getting rid of people and programs the government opposed. Similarly, cutting the UCH into separate institutions and opening the market for the remarkable proliferation of new institutions diminished the UCH's political power and the threat that represented—for the government remained preoccupied with the danger of a future return to autonomy and leftist politics.

The 1981 law authorized creation of private higher education institutions at three different levels: universities, professional institutes, and technical training centers. It slashed public funding for the existing universities. The regional branches of the UCH were ripped away into new universities or professional institutes. The Santiago campuses lost more than half their 24 faculties, now clustered in two new metropolitan universities. By the time citizens pushed out the military government (1990), a system of 8 universities had become one of roughly 70 universities, 80 professional institutes, and 150 technical training centers. The university's enrollments had plummeted from their 1974 peak of 63,000 to just 18,000, and the government provided only 30 percent of the UCH budget. Once the government's main education arm, the UCH had fallen far from its monopoly over even higher education.

Nor were the UCH's losses all to the institutions created by the government plan. Many professors and graduate students either left academia or became refugees. A brain drain that hurt the UCH badly brought Chilean talent to universities throughout Latin America, Europe, the United States, and other continents as well. But Chile pulled a miracle out of the hat as many refugees remained in their country. They formed a network of private research centers surpassing any in Latin America, the region in which such centers grew and assumed an importance unparalleled anywhere. In this too, the UCH led, joined by the Catholic University of Chile and others especially as regime repression struck past the left to the center. The private research centers achieved a breakthrough in the quantity and quality

of social research. Remarkably, with the help of the Church and international philanthropy, they also became major sites of opposition to military rule and major actors in the development of democratic alternatives.

Remarkable too has been the continuity of higher education policy as Chile has once again undergone political transformation. The democratic regime that so strongly denounces its predecessor's repression, and has restored university autonomy, has tacitly or explicitly endorsed many of its neoliberal reforms. Examples include competition among the extensive array of institutions (and within them) and ample private funding (with tuition). Continuity is also evident as private research centers remain. Those who expected a massive return to the UCH and other leading universities have been disappointed. For one thing, the centers have established reputations and networks, and many researchers are happy to avoid the bureaucracy or teaching responsibilities they associate with places like the UCH. For another, the democratic government was not about to increase subsidies to universities. Rather than a massive restoration of the UCH, then, one sees a variegated and uncertain process of adjustments and accommodations allowing links between research centers and the UCH, including sharing of personnel and facilities.

All in all, the UCH has done very well in adapting to the changes it has faced. In its early history it established missions unknown by its colonial predecessor. It then transformed itself into a fine professionalist university and proceeded to add a research component that surpassed the Latin American norm. Its reform was more academically serious and successful than most elsewhere. The repression it then suffered was more extreme and took a major toll. Nonetheless, the UCH showed a capacity for preservation even then. While critics see this as proof of how much waste had been present, a friendlier interpretation is that the institution handled its task with skill. As the new democratic government does not hand the UCH back its prior privileges, the university seeks to

reconstruct itself and build new relationships with an array of other institutions. As it must compete for funds, it continues to come out at the top in attracting top students and research funds. With its restored autonomy, it has restored decency, academic freedom, and a degree of participation. Rector Jaime Lavados was a courageous voice for freedom and higher education in the long period so hostile to those causes, and the present head of the student federation, which is opposing government higher education initiatives, is a communist. But the UCH has not fallen back into disabling internal policies and it has managed to handle the challenges thrust on it by new economic realities. Indeed, the UCH leads the public universities' demands that the government ease the regulations that still handicap them in terms of financial flexibility. For international agencies and most independent experts on higher education policy, the UCH is the model national university for reforms vigorously promoted but still only sporadically achieved throughout Latin America and, for that matter, much of the rest of the world.

No Latin American university matches the UCH for prolonged stature. The national universities of Argentina and Mexico have enjoyed periods at the top, but have since been too wracked by compromising factors. They lay claim now to only mixed reputation within their societies. But the UCH, through its nation's good times and bad has maintained—deservedly—a high degree of respect.

Further Reading: The best English-language source for the history of the University of Chile, though not completely about the university, is offered in Iván Jaksic, *Academic Rebels in Chile: The Role of Philosophy in Higher Education and Politics* (Albany, New York: SUNY Press, 1989). On the period of military rule, see Daniel Levy, "Chilean Universities under Junta," *Latin American Research Review* 21, no. 3 (1986).

—Daniel C. Levy and Andrés Bernasconi

UNIVERSITY OF COIMBRA

(Coimbra, Portugal)

Location:	In a former royal palace in the oldest section of Coimbra, 120 miles north-northeast of Lisbon.
Description:	A state university encompassing seven faculties and enrolling approximately 13,100 students.
Information:	Director of International Relations Office Paço das Escolas 3000 Coimbra Portugal 35410, 35418, or 35420

Founded in Lisbon in 1290, the University of Coimbra is one of the oldest universities in Europe. By virtue of its near monopoly on higher education in Portugal, which it held for more than 600 years, the university played an integral role in the cultural life of Portugal. Scholars from Coimbra occasionally became prominent throughout Europe: for centuries, the destiny of the Portuguese nation was in the hands of those who had studied or taught at Coimbra. Among the many distinguished persons who passed through Coimbra's halls were Luís de Camões, Portugal's foremost poet, Antonio Egas Moniz, Nobel laureate in medicine, and António Salazar, premier of Portugal from 1932 to 1968. Throughout most of its history, the university had a reputation as a bastion of conservatism, both politically and scholastically. Reforms aimed at modernizing the curriculum were rare and often met with great resistance. The major exception occurred in the eighteenth century when long overdue reforms were undertaken. Today the University of Coimbra, though no longer the nation's sole institution of higher learning, maintains ■ preeminent place in Portugal because of its illustrious history and time-honored traditions.

The first universities on the European continent were established during the mid-twelfth century. The creation of a university in Portugal was paramount in helping to establish a national identity for the nation, which had thrown off vassalage to the Spanish monarch in 1139–40. Scholars brought from France by King Alfonso III at the close of the thirteenth century helped to germinate the idea of establishing ■ Portuguese university. In 1288 a petition to authorize the creation of ■ *studium generale* in Lisbon was sent to Pope Nicholas IV by several religious leaders including the abbot of Alcobaça, prior of the monastery of Sant Cruz in Coimbra. A papal bull establishing ■ university was issued in 1290. That same year ■

royal charter was issued by King Denis, the founder of the university. Faculties were established in arts, law, canon law, and medicine.

Unlike other universities outside the Iberian Peninsula, the university at Lisbon came under close royal control, and its development was nurtured by the king. Teachers were appointed by the monarch. Students, however, held considerable power, for rectors (initially there were two) were elected from among the students and by the students. The election of rectors by the students remained in place for more than 200 years.

The university did not thrive in Lisbon. As was the case in many medieval universities, conflicts arose between the students and the residents of Lisbon. In 1308 the university was moved to Coimbra; a royal charter was issued in 1309. The sleepy town along the Mondego River was already a center of learning by virtue of its renowned monastery school of Santa Cruz. The university was established on the site of what is now the main library. For unknown reasons, perhaps because the town of Coimbra was still quite provincial, the university was moved back to Lisbon in 1338, only to be again transferred back to Coimbra 16 years later. The peripatetic university was once again moved back to Lisbon in 1377, where it remained until the mid-sixteenth century.

In Lisbon the university underwent few major alterations. In 1411 a faculty of theology was established with a chair endowed by Prince Henry the Navigator. Like most institutions of its kind, the curriculum of the university emphasized the study of canon and civil law and theology. In the 1430s Coimbra acquired ownership of its buildings, which had previously been leased by teachers. By the 1450s the university had about 1,000 students and was generally considered a medium-sized school, compared to others on the continent.

Student life was highly regulated by ■ code known as the *honeste se gerrere* which dictated proper behavior under four criteria. The all-male student body was not to have any contact with women. It was feared that such contact would tend to inflame relationships between the students and the townsmen. Bearing arms was prohibited, mainly to prevent fatalities when conflicts did arise. Simple apparel was proscribed, hence the statute issued in 1321 requiring students to wear gowns, a tradition that endured well into the twentieth century. Finally, students were to refrain from hurling insults at teachers and fellow students. In a highly chivalrous era, this rule was meant to assuage challenges to one's honor. Students were responsible for paying their teachers' lecture fees, according to ■ graduated pay scale set forth by King John I.



University of Coimbra

By the sixteenth century, preparations were being made to move the university back to Coimbra. The impetus for this move came from the growing awareness of the backwardness of education in Portugal. It was believed that in order to implement significant structural changes, the university should start anew; a chief proponent of this move was the Spanish humanist, Luis Vives (author of the 1531 work, *De Causis Corruptarum Artium*, one of the major early writings on education). By the 1530s some secondary and graduate courses were being taught at the monastery of Santa Cruz in Coimbra. The days of the university at Lisbon were numbered. The return to Coimbra came in 1537 under King John III. The university was housed in the royal palace of Alcaçova, which in the 1540s was refitted to house lecture halls. The university at Lisbon was effectively extinguished, not to be revived until the twentieth century.

The move to Coimbra did in fact lead to some changes. Teachers at Lisbon were not guaranteed jobs at Coimbra, and many did not move with the university. Most of the new faculty at Coimbra came from the University of Salamanca. The main curriculum was kept, but courses in each division increased dramatically, some doubling. New bylaws and ordinances reaffirmed and expanded royal control. Rectors, long elected by students, were now to be appointed by the king. The influence of the university in Portugal was enhanced in 1541 when a law was

enacted prohibiting Portuguese students from acquiring degrees abroad.

A new college of arts was established in 1548. At first it functioned independently but later came under university control. The college was an important center for humanism; however the reforming spirit at the university was shortlived. The orthodox nature of the Counter-Reformation and the Inquisition caused many teachers to come under charges of being "Lutheran." Liberal humanistic education and free inquiry were eliminated. A further blow came during the 1550s when the college of arts was entrusted to the Jesuits and became an instrument of the Counter-Reformation. In 1559 a new Jesuit university was founded at Évora. Although it was much smaller than the one at Coimbra, it represented a challenge to Coimbra's monopoly.

Despite the ravages wrought on liberal education by the Counter-Reformation, a group of Jesuit scholars at Coimbra known as the "conimbricenses" became famous throughout Europe for their commentaries on Aristotle. These commentaries functioned as the main Aristotelian textbooks for Europe during the early seventeenth century, and their works were reprinted between 15 and 25 times. During this period the university remained conservative in its outlook. Further reforms were needed but were not implemented until the eighteenth century.

The great reforms of the eighteenth century came under the direction of the Marquis de Pombal, chief minister of King José I. The basis of Pombal's reform was the production of a new cadre of enlightened officials for the bureaucracies of the church and state. By the mid-eighteenth century the inadequacy of education in Portugal had become apparent, especially in the sciences. No longer contending with the University of Évora, which had been closed down in 1759, the University of Coimbra became the chief object of reform. In 1770 a panel of inquiry, known as the *junta da providência literária*, was set up to establish new statutes for the university. By 1772 the new statutes received royal assent. A university press was founded and new faculties were established in mathematics and philosophy. In addition, the existing faculties of theology, canon law, and medicine were modernized. In the sciences, experimental research was encouraged and the study of natural sciences, long neglected, was included in the new faculty of philosophy.

Another key element of the Pombal reforms was the addition of several new buildings and laboratories. A certain amount of significant new construction had occurred earlier in the century, during the reign of King John V (1707–50). Treasures brought from Portuguese Brazil financed most of these projects. The baroque bell tower, which came to be a symbol of the university and the town of Coimbra, was constructed between 1728 and 1733. At about the same time the magnificent baroque library of King John was built. New construction during the Pombal era went much further. In keeping with the reforms, an observatory and laboratories for physics and chemistry were built, along with a botanical garden and a museum of natural history. Many of the new buildings, including the chemistry laboratory and the natural history museum, were designed by the English architect William Elsdon.

Upon the death of King José I in 1777, his daughter Maria succeeded. Maria I dismissed Pombal and endeavored to reverse many of his reforms. On the whole she was unsuccessful; however, she did manage to virtually crush the overall spirit of the reforms, and the university came under harsh criticism by dissatisfied students. Nevertheless, during Maria's reign and that of her successor, John VI, education in Portugal was advanced somewhat with the establishment of schools in Lisbon and Oporto. These schools were not universities but rather "technical schools" designed to offer courses outside the scope of those found at Coimbra. Also, in 1794 the University of Coimbra gained the power of inspection over all schools in Portugal, an authority that lasted until 1859.

Throughout the nineteenth century the university remained relatively stagnant. The only major change was the merging of the faculties of civil and canon law into one school in 1837. The new school of law gained some renown throughout Portugal as the school of choice for the sons of the wealthy. Thus Pombal's desire to provide a "training school" for the political bureaucracy was ful-

filled. Most of the new politicians entering service after the Portuguese revolution of 1820 were graduates of Coimbra.

Portugal underwent many political and cultural changes during the nineteenth century in its struggle to become a modern nation-state. As the only university in Portugal, Coimbra provided an intellectual venue for discussions concerning Portugal's future; both students and teachers were active in these debates. One of the most famous debates occurred during the 1860s. The "Coimbra question," as the debate came to be known, involved two schools of thought. One group, led by the poet Antero de Quental, attacked the prevailing norms of society in Portugal. Opposed to this group were the defenders of the status quo, led by the blind poet Castilho. By elucidating the controversies surrounding political and intellectual life in Portugal, the students and teachers at Coimbra played an integral role in fostering the cultural and political climate that ultimately led to the fall of the monarchy and the creation of the Portuguese republic in 1910.

With the advent of the republic came changes at the university and in university education in Portugal. Perhaps the most influential change affecting the University of Coimbra was the founding of two new universities in 1911 at Lisbon and Oporto. Coimbra's centuries-old position as Portugal's sole center of university education ended. Secularization was a hallmark of the new regime, and the school of theology at Coimbra was abolished. Moreover, rectors, appointed by the monarch since the final move to Coimbra, were made elective once again (this system lasted only until 1918–19 when they became government appointees). During this era the young António Salazar began his studies at Coimbra, matriculating in 1914. Salazar went on to earn a doctorate in finance and economics in 1918 and became a lecturer at the university.

The Portuguese republic proved to be a complete failure. In the course of 16 years Portugal had 45 different governments and only one president who completed a full term. Once again, students and teachers at Coimbra played an important part in the overthrow of the republic and the creation of the dictatorship in 1926. It was at Coimbra that the ideological tenets outlining opposition to the republic were nurtured. When Salazar became premier in 1932, he filled his cabinet with professors from the Coimbra law school.

Salazar never forgot his alma mater, and in 1948 he instituted a public works project to construct a new campus at Coimbra. This action was one of his more questionable endeavors, for many of the university's and the town's historically and artistically valuable structures were torn down. Buildings constructed as part of this project include the main library, and the faculties of arts, medicine, and science.

During the 1970s eight new universities were founded in Portugal, further diminishing Coimbra's preeminent position in higher education. Nonetheless, the university continued to expand. In 1975 the largest of the univer-

sity's buildings, that for faculty of science and technology, was completed. In 1987 a new university hospital was inaugurated. The university's student body also increased during this period; between 1972 and 1995 enrollment at the university increased by more than 60 percent. Today the University of Coimbra retains significant prestige as a living testament to the Portuguese history by virtue of its position as the oldest institution of higher learning in the country.

Further Reading: The second volume of Hastings Rashdall's *The Universities of Europe in the Middle Ages* (Oxford: Clarendon Press, 1936) provides a well-documented study of the university's early years. Another valuable source for the university's beginnings is *A History of the University in Europe* (Cambridge: Cambridge University Press, 1992), edited

by Hilde de Ridder-Symoens. The development of the university in the medieval and early-modern periods is best described in A.H. de Oliveira Marques's two volume *History of Portugal* (New York: Columbia University Press, 1972). *Pombal, Paradox of the Enlightenment* by Kenneth Maxwell (Cambridge: Cambridge University Press, 1995) provides an exhaustive account of the great reformer's work at Coimbra. The definitive work outlining the history of the university is *The University of Coimbra* (Coimbra: Office of the Rector of the University of Coimbra, 1988). The section on the history of the university was written by Professor Luis Reis Torgal and contains a thorough and unbiased account of the university's history. The text is complemented with many fine color photographs of the university's buildings.

—Jeffrey M. Tegge

UNIVERSITY OF COLOGNE

(Cologne, Germany)

Location:	West of the town center and the Rhine River in Cologne, Germany.
Description:	A large state university of 54,000 students with faculties of social and economic sciences, medicine, law, philosophy, mathematics and physical sciences, and education.
Information:	University of Cologne Albertus-Magnus-Platz 50923 Cologne Germany 221 4701

The present University of Cologne is a twentieth-century institution arising out of the trade schools that flourished in Cologne (Köln) in the first decades of the century. Even the ancient University of Cologne is a much later foundation than is often supposed, having been founded long after Cologne had already become a center for learning, well over a century after the Dominicans and then the Franciscans had established their theological *studia* there. The medieval university, founded by a brief of Pope Urban VI dated May 21, 1388, was dissolved by the French on April 28, 1798, in the wake of their conquest.

When Cologne was incorporated into France by the 1801 Treaty of Luneville, it was only sufficiently important to become the chief town of an *arrondissement*. The medieval university was succeeded by a short-lived French Université de Cologne; there was no university in the town between the assignment of the city to Prussia by the Congress of Vienna in 1815 and the establishment of the modern institution by an agreement between the city of Cologne and the Kingdom of Prussia of May 29, 1919. Prussia did attempt to reestablish Cologne's university, but the project was thwarted by Berlin, and in 1818 the University of the Rhine was instead established at Bonn.

Today's large and distinguished university, which in 1995 had 54,000 students and a teaching staff of 1,870, has only a brief history. Its foundation dates from a first memorandum on vocational tertiary education of June 1879. The first independent institution was founded May 1, 1901, followed by the academy of practical medicine, opened on October 25, 1905, and the polytechnic for social administration on February 5, 1912. The new university, founded by the 1919 agreement, passed in 1953 under the jurisdiction of the Ministry of Education, and on April 1, 1954, to the control of the province of North-

Rhine Westphalia. In 1980 the Cologne departments of teacher training were incorporated into the university. A fine statue of the early thirteenth-century Dominican, Albert the Great, by Gerhard Marcks stands outside the building—although Albert died before the modern university was founded. Nonetheless, in 1988 the university celebrated its 600th anniversary.

The medieval university arose out of the desire neither of prince nor of prelate as in the rest of northern Europe, but, as was more usual south of the Alps, of the municipality itself to have within its walls an institution capable of bestowing degrees. There was already both the Dominican and Franciscan *studia*, established in the thirteenth century by friars drawn to Cologne by the excellence of Cologne's grammar schools, notably the cathedral school. The cathedral itself, with its relics of the three magi, was one of the most important places of pilgrimage in the west.

Albertus Magnus instituted the Cologne *studium* of the Dominicans in 1248, arriving from Paris with his distinguished disciple, Thomas Aquinas. The Dominicans, who favored a theory of knowledge in which the mind's activity was dependent on sense perception (in spite of the difficulties such doctrines created for an explanation of the immortality of the soul), differed in theological style from the Franciscans, who tended toward explanations of human knowledge in terms of direct divine illumination. Cologne, reflecting such theological discussions in Paris, soon became the leading forum for thirteenth-century intellectual debate on the central philosophical and theological issues of medieval Christianity.

By 1388 universities had been founded at Prague, Vienna, Heidelberg, and Erfurt. The merchants of Cologne naturally wished to underline and consolidate their city's importance and to service its administrative requirements with a tertiary institution of professional training. The patrician hold on civic authority was being challenged by the guilds, sometimes in alliance with, and sometimes opposed by, the archbishops. Although the patrician oligarchy had been challenged by the weavers in an uprising of 1370, which was suppressed, the city was to be ruled from 1396 by what amounted to an alliance between patricians and guilds in a new municipal constitution, the *Verbundbrief*. In the meanwhile, the merchants had solicited from the pope the brief founding the university.

The bull was proclaimed in December 1388, and the *studium* opened in January 1389 with 21 masters, 3 in theology, 2 in medicine, 1 in law, and the others in arts. Further privileges were soon granted by the Duke of Guelders in 1396 and by the Emperor Frederick III in 1442, but it was the city council that exercised the closest



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supervision and the greatest authority over the young institution. Most of the masters and students came from Paris and the German universities that had already been founded. As was usual, the teaching posts were funded from the annexation with papal permission of ecclesiastical prebends; the chairs of law and medicine and some posts in theology were funded from an endowment from the municipality. The pope created a prebend for each of the 11 monasteries, although masters in the arts faculty were expected to live from their fee income. In its first year the university received 738 students, the number having been swelled by the pestilence and quarrels that nearly emptied Heidelberg in 1387.

Professional appointments were entrusted to the elected rector and four municipal *provisores*, and the constitution was adapted from that of Paris—but without

splitting into “nations,” as had residually occurred in the older German universities, Prague and Vienna. Masters from all faculties were eligible for the rectorship, to pass between each faculty in turn. Civil jurisdiction belonged in minor matters to the rector, in more serious ones to the rector and deans, and in the most serious matters to the university itself. Spiritual jurisdiction was conferred on the abbot of St. Martin in Cologne, together with the deans of St. Paul in Liège and St. Salvator in Maestricht. A number of endowed student houses were founded, beginning with the *Bursa coronarum* established in 1430 for 12 poor students governed by a rector.

Matriculations fell off at Cologne from 1391, no doubt partly on account of Heidelberg’s recovery, but admissions rose in the fifteenth century, reaching an annual figure of 1,348 in the five years following 1460. The religious orders

kept coming, however, and kept the intellectual reputation of Cologne high, apparently coming near to achieving the sort of intellectual pre-eminence in the Rhineland which Paris was exercising in northern France. The fifteenth century was doubtless the period of the university's greatest ascendancy. In 1448 the university had sided with Nicholas V, who as pope was victorious over the conciliarist movement. By 1520 the common university opinion was hostile to the religious reformer Martin Luther. Its views were to be predictably ultramontane well into the sixteenth century. By 1525 political events in the wake of the Great Schism had virtually consummated the university's collapse, and it was to regain vitality again only during the period of the Catholic Counter-Reformation.

The most famous incident in the university's history, which also explains its abrupt decline, is the episode concerning Johann Reuchlin in the very early sixteenth century. Reuchlin was a Hebraist who thought that studying the sacred text in Greek and Hebrew mediated the religious experience of direct contact with God. Among his early works were a Hebrew grammar and dictionary and two cabalistic treatises in dialogue form. He came into prominence when a converted Jewish butcher called Johann Pfefferkorn became convinced that the conversion of the Jews could be effected by the destruction of their religious books. Pfefferkorn enlisted support for his view from the Cologne Dominicans and from Ortwinus Gratius, a teacher in the university arts faculty. Reuchlin had already published a consideration on the state of the Jews, and, alone of seven authorities consulted at the emperor's request on the likely effects of exercising coercion on the Jews, opposed Pfefferkorn in a report of October 1510. Confiscated Hebrew manuscripts were returned.

The dispute became bitter, and early in 1513 Reuchlin issued a virulent attack on the stupidity and senility of the Cologne theologians. In March 1514 Reuchlin published a selection of letters written in his support, *The Letters of Famous Men*. Then in October 1515 appeared the famous satirical attack on Reuchlin's opponents, *The Letters of Obscure Men*, mostly by Ulrich von Hutten but published anonymously, mockingly purporting to support the Cologne theologians by sarcastically congratulating them on their reactionary attitudes, and ironically flattering their self-importance. The letters were addressed chiefly to Ortwinus Gratius. Hutten attacked the Cologne Dominican inquisitor, Jacob von Hoogstraten, by name, and came to see Luther's schism in terms of a political movement by which Germany was throwing off the tyranny of Rome. The letters reflect the discredit into which the reactionary scholastics of the university had fallen by the early sixteenth century in the face of new learning. A second edition of the letters appeared with 7 more letters in 1516, and in 1517 there was another edition, with a further 62 letters. The European reaction to their publication, about which Reuchlin himself seems to have been embarrassed, makes clear why the university teaching

and scholastic positions they caricature had fallen in such low public esteem even before the schism broke out.

During the sixteenth century, the university adhered doctrinally to the *via antiqua*, the positions inaugurated by Aquinas and Scotus, which relied heavily on human reason's capacities to reach truth, and was opposed to the fashionable Ockhamism of the late fifteenth century, which relied more emphatically on reason's feebleness and on the need for revelation. Cologne's position was not reactionary but advanced, since the Thomism of the *via antiqua* seriously advanced confidence in rational human powers, and the way in which it replaced the *via moderna* mirrored the growing confidence in human nature also evident in the new cult of classical antiquity.

Cologne's Thomism was carried into the eighteenth century, during which efforts to reform the university had no great effect. As the Cologne institution declined, the new university at Bonn was growing. Although the formal foundation dates only from 1818, the academy founded at Bonn in 1777 became a university in 1786. Like Cologne, it was closed by the French. Cologne's university did not reopen as a German university until 1824.

Reorganization of the German university system in the wake of the Napoléonic wars had been radical. After the closure of Mainz and Cologne in 1798, universities in Bamberg, Dillingen, Duisberg, Rinteln, Helmstedt, Salzburg, among others, also were dissolved. Most of these universities, with the exception of Mainz, were scarcely missed. In their place arose three new great institutions, the reorganized University of Munich, the Royal Friedrich Wilhelm University in Berlin, and the Rhenish Friedrich Wilhelm University in Bonn.

In Bonn, there developed an evangelical theology faculty, intended to replace Cologne, and the best available talent was sought not for Cologne, but for Bonn. By the end of the century, both in Bonn and Cologne and throughout Germany, theology as a discipline, whether Lutheran or Catholic, was in serious decline. Law was in the ascendant. The numbers studying philosophy climbed slowly, while those studying medicine declined. These and other changes in the German university world are partly attributable to the introduction of compulsory military service introduced in 1867.

The university that was recreated in 1919 was supported by the state and remained successful until Hitler came to power. It was closed from 1933 to 1953. The new University of Cologne is today again a large and flourishing world-class institution offering a full range of disciplines and facilities, clearly anxious to claim continuity with its briefly illustrious late medieval predecessor. It has an international character, and again counts among the major institutions of higher education in western Europe.

UNIVERSITY OF COPENHAGEN

(Copenhagen, Denmark)

Location: In the capital city of Denmark, in the heart of the city center, just northwest of the museums.

Description: A publicly supported university, enrolling approximately 25,000 students.

Information: The University of Copenhagen
Narregårde 10
Box 2177
DK-1017
Copenhagen K
Denmark
35 32 26 26

Erik of Pomerania, king of the Scandinavian Union (Denmark, Norway, and Sweden), during whose reign Copenhagen became the capital of Denmark, gained authorization from Pope Martin V in 1419 to found a university. The pope allowed the new institution faculties in the “inferior” fields of arts, medicine, and law, but not in the “superior” area of theology. An additional papal condition was that the university be established within two years. Preoccupied with wars, Erik was unable to meet the papal deadline. Finally, in 1438, frustrated by the politicking of the nobles and high clergymen of the *Rigsraad* (the Council of State), King Erik quit the throne for a life of piracy.

Half a century later, in 1448, King Christian I came to the throne of an unstable Scandinavian Union, forced to share his power with the *Rigsraad*. By 1470, he had lost control of Sweden. In 1474, he made a pilgrimage to Rome, where Pope Sixtus IV entertained him lavishly. With the help of Queen Dorothea (his wife and also the widow of his predecessor), he won papal authorization for the university, which was to have all four faculties, offering degrees in Roman law, canon law, philosophy, medicine, and, this time, theology. The new university was founded with the Bishop of Roskilde, Oluf Mortensen, as its first chancellor. In accordance with the authorizing papal bull, it was given its own jurisdiction, which gave it a large measure of autonomy. This status lasted until 1771.

The University of Copenhagen opened in 1479, with accommodations in the Town Hall. (The Swedes, having learned of the university coming to Copenhagen, had stolen a march on the Danes by founding the University of Uppsala in 1477.) The crown lacked funds, partially due to the war with Sweden and partially due to the extrava-

gant lifestyle of Christian I. Funding was largely provided by the Church, and many salaries were paid by providing housing and food from farms subject to the Church.

Christian II, who reigned from 1513 to 1523, was a progressive king, whose most successful reforms were in education, reforms which represented an effort to develop the peasants and artisans of Denmark into a middle class. Appalled by the ignorance of the clergy, Christian II issued an edict forbidding anyone to be ordained a priest who had not studied at the University of Copenhagen; he also began to separate the Danish church from allegiance to the papacy. The university, which had never managed to achieve popularity, ceased operations under Frederick I, Christian II's successor.

Not until 1537, when a civil war left Denmark in Lutheran hands, was the university reconstituted with Johan Bugenhagen, a scholar of Wittenburg, the university most associated with Martin Luther, a key figure in the new orientation of the university as an evangelical Lutheran institution.

Copenhagen had never been a school for the wealthy. The income of a beginning clergyman, which is what a recent graduate was most likely to become, was low; such positions would not attract members of the nobility. Some students were so poor that they could not afford tuition and housing costs, a condition alleviated for some 100 students when Frederick II established a scholarship fund in 1569. Admission criteria were not rigorous. If a student received a testimonial from the headmaster of his grammar school, he could be admitted and “deposed,” a ceremony which took place when students entered the university. In his history of the university, Svend Erik Stybe describes this unusual ceremony:

The students had first to be “deposed.” This was to symbolize that they had put aside their old character in order to enter into a higher and more spiritual sphere. Their faces were blackened, a dunce's cap bearing two horns was placed on their heads, and they were given a long nose and a hunched back. They then had to behave as rowdily as possible, among other things by uttering the most abusive language they could think of. This would induce the “deposer” to flog them and tear off their disguise. Afterwards they would be washed clean, would put on ordinary clothes and seat themselves in the auditorium, where one of them would address the dean in Latin. A student thus “deposed” was called a *depositorus*, and from the final syllable of this word comes the name for Danish freshman—a *rus*.



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A student's program of studies was expected to last two or three years. Perhaps he would live in a professor's home; in addition to collecting rent the professor might supplement his income by providing tutoring services. A student's career might conclude successfully when his major professor issued a statement attesting to his competence. Three degrees were also offered by examinations. The baccalaureate and master's degrees were available in philosophy, and doctorates could be earned in medicine, law, and theology. Art was the province of the philosophy faculty and comprised what is now commonly called arts and sciences. Geography was a part of physics, and astronomy was a part of mathematics. The only law taught was Roman law, which had no direct bearing on life in Denmark, and so few studied it. Medicine was based on Galen's theory that illness could be cured by restoring the balance of the humors: blood, phlegm, black bile, and yellow bile.

The first of a long line of distinguished students and faculty members, astronomer Tycho Brahe, lectured at

Copenhagen in 1574, a year after the publication of his *De Nova Stella*, in which he described his discovery of a new star in the constellation of Cassiopeia.

The University of Copenhagen expanded as it passed through the seventeenth century. Buildings were enhanced, most notably the *Konsistorium* (University Senate) building, which dated from the fifteenth century and which had been part of the bishop's palace before the Reformation; after the Reformation, the building was used as the residence for the university's treasurer. A student residence hall was added, and a students' church, Trinitatis Church, sporting a distinctive, round tower (the *rundetaarn*) was built with a library above it and an observatory above that. Another existing structure, which housed the library until the 1650s, was given a state-of-the-art anatomical theater, where lectures could be developed in conjunction with dissections. A botanical garden was added, as was a new building with an *auditorium superius* for theology lectures above and an *auditorium inferius* for philosophy lectures below.

The debate over religion did not end when the university was reconstituted as an evangelical Lutheran institution in 1537. The Society of Jesus (Jesuits) had emerged as the strongest force in the Counter-Reformation. Their reputation for excellence in higher education prompted some wealthy Danes to send their sons to Jesuit schools in other countries. The university's registers note several returned "Jesuit" students. No steps were taken against them; however, when one applied to be registered as a private tutor, he was required to submit to an examination on his theological views. In 1606, a Norwegian-born Jesuit, Laurits Nielsen (called Kloster-Lasse) attempted to start a Catholic Counter-Reformation in Denmark. King Christian IV forced him to appear before the Lutheran professors of the university, where Kloster-Lasse received a message from the king that he was to be expelled from the country.

During the seventeenth century, the University of Copenhagen began to break away from its reputation as an educational backwater, an achievement largely owed to a group of scholars related by blood and by marriage and loosely identified as the Bartholin family. The founder of the "dynasty," Thomas Fincke, mathematician and physician, professor from 1591 until his death at 95 in 1656, was a dominant figure at the university, but his descendants' reputations would overtake his. One of his daughters wed Ole Worm, another medical faculty member, who was the first to salvage the ancient artifacts that still lay scattered about Scandinavia. Worm's 1643 work on the interpretations of runes, though largely wrong, was seminal, and his accumulation of ancient artifacts made up the collection of Denmark's first museum. He was also the professor in charge of the botanical garden. From it, he produced a number of medicinal plants which he used in his medical lectures.

Fincke's other daughter married Caspar Bartholin, professor of medicine, author of an anatomy text, and father of Erasmus Bartholin, professor of geometry and medicine, and Thomas Bartholin, also professor of medicine. Erasmus Bartholin is best noted for his work with the refraction of light. To illustrate his lectures Thomas Bartholin dissected animal and human bodies; the human bodies were the corpses of hanged criminals, who were, by royal decree, turned over to the anatomical institute instead of being drawn and quartered. Thomas Bartholin is credited with discovering that the liver is not the governing organ of the body or the source of blood and with the discovery of the lymphatic system.

The Bartholin line's strong presence was not always to the benefit of the university. For instance, Niels Steensen, also called Nicolaus Steno, who had demonstrated that the heart was a muscle and that muscles consist of more than fibers, was denied the chair from which Thomas Bartholin had just retired. The chair went instead to Matthias Jacobaeus, who was connected to the Bartholins. Steensen would later demonstrate in Paris that his understanding of

the brain was far ahead of that of his contemporaries. What the Bartholin era brought to the University of Copenhagen was empiricism. Until the seventeenth century, scholasticism, which saw faith and reason as the chief sources of knowledge, had held sway. Now, under the empiricists, observation and experience became that source.

Copenhagen was attacked by Sweden in 1659; the entire city defended itself, with the students fighting in the area surrounding the royal palace. Ole Borch, one of the school's future leading empiricists, who was a philologist, chemist, and botanist, became a war hero and was rewarded by the country with a lifetime income. He went on to do important work in the classification of plants. With no family to which to leave his considerable fortune, he left funds for the construction of a residence hall, *Borschs Kollegium*, which still stands.

The excitement of the defense of Copenhagen left the student body having a difficult time adjusting to the relative placidity of the scholarly life. They soon found another outlet for their aggressions. Frederick III had come to the throne in 1648. Beginning in 1660, with a meeting of representatives of the nobility, clergy, and bourgeois classes, he began displacing the nobility from their position of power. The university's students, not generally members of the nobility, began to turn on the servants of the nobles who had come to the meeting. Students—even those who were in no battles—had taken to wearing swords as part of their normal dress. Professors attempted to intervene in the disputes between students and the servants and to forbid the students to bear arms, but the king did not support the ban. After the king took absolute and hereditary power in 1661, the professors again forbade the bearing of arms by students, with the result that the students would simply take their swords off when they went to meet with professors. The custom of Danish students carrying swords lasted into the middle eighteenth century.

The man who is credited with founding Danish literature, Ludvig Holberg, came from Norway to attend the University of Copenhagen in 1702 and received a degree in 1704. The publication in 1711 of his history of Europe resulted in a government grant. In 1717, he was appointed professor of metaphysics at the university; in 1720, he was promoted to the chair of public eloquence, a lucrative position, which ended years of poverty. After writing about history, law, and philology, Holberg turned his talents to the theatre, for which he produced a number of satiric comedies, in the vein of Molière. Literary critic Edmund Gosse and B.W. Downs, author of *Norwegian Literature 1860–1912*, wrote in the *Encyclopaedia Britannica*:

Holberg found Denmark provided with no books, and he wrote a library for it. When he arrived in the country, the Danish language was never heard in a gentleman's house. Polite Danes were wont to say that a man wrote Latin to his friends, talked French

to the ladies, called his dogs in German and only used Danish to swear at his servants. The single genius of Holberg revolutionized this system.

In his history of Denmark, Paulle Lauring observes that the reign of Frederick IV (1699–1730) marked the beginning of the intellectual life in Denmark. Credit for this activity and for the arrival of the Enlightenment in Denmark in the latter half of the eighteenth century must be shared by the egalitarian Pietists (they represented a movement within the Lutheran community that reached out to educate heretofore neglected classes of Danes) and by their old-guard, elitist opposition. It was, however, the traditions of Ludvig Holberg and the Bartholins that paved the way for the Enlightenment at the University of Copenhagen.

Unfortunately, the intellectual advancement of the university was interrupted by the fire of Copenhagen in 1728, which destroyed most of the university. The old *Konsistorium* building, and with it the archives, was saved by the students. The university was rebuilt relatively quickly. A new *Kommunitets* building, a new auditorium building, and a new anatomical theater, complete with specimens, had all been put into operation by 1740. The most irreparable damage was to the *rundetaarn* or round tower, of Trinitatis Church.

The Bartholins had firmly planted empiricism in the scientific studies at the university. Once empiricism became established, science flourished. The most noteworthy figure in medical and scientific study in the mid-to-late eighteenth century was Georg Kratzenstein, a young German scholar, who was wooed away from the University of St. Petersburg (Russia) with a position in experimental physics and the additional post of professor designate of medicine. An early experimenter with electricity, Kratzenstein had trouble finding a place to live. Landlords had heard that among his possessions was a machine to attract lightning. Kratzenstein lectured on physics, chemistry, and natural history. He was also instrumental in making the standards for medical education stricter. Elected rector of the university four times, he worked to improve the conditions of the tenant farmers who worked the estates that supported the university. He was also an advocate for Jewish students, the first of whom was admitted to the medical school in 1758.

Other reforms of the latter part of the eighteenth century included an increase in the number of professors, greater assurances that a professor hired for any position would be the best available candidate (and not simply a favorite of the king or some other important person), degree-examination requirements for grammar-school teachers and physicians, and abolition of the university's separate jurisdictional status. The most noteworthy change was a revision in the university's mission. In the past, the chief concern had been to train scholars in the fields of theology, law, and medicine; it was now in the

business of training young men ready to begin to work as clergymen, physicians, judges, and senior civil servants.

The Napoleonic wars brought disaster to Copenhagen and to the University of Copenhagen. In 1807, the city came under heavy bombardment by the British, and most of the campus was damaged or destroyed. The old *Konsistorium* survived intact, as it had in the fire of 1728, but the university was left to make use of the partial buildings that were left standing and of whatever other accommodations could be found. As a result of the catastrophe brought on by the wars and by the collapse of the Danish merchant trade, the university endured in such conditions for the next quarter century, when rebuilding was finally begun.

It was precisely under such conditions that the university showed its best fruits of the Enlightenment. One of a wave of romantics, Hans Christian Ørsted, whose pantheistic leanings would not be disclosed until 1850, the year before his death, revealed in 1820 a demonstrable relationship between magnetism and electricity that would eventually lead, along with Faraday's discovery of induction, to electromagnetic theory, a new branch of physics, and to the development of every electrical and electronic device more complicated than a flashlight.

Librarian and literary history professor Rasmus Nyerup noticed the abilities of student Rasmus Christian Rask and enlisted his assistance in translating *The Younger Edda*, an Old Icelandic classic text, which was published in 1808, the year after the English bombardment. Three years later, Rask published a guide to the Icelandic language (a remarkably slow-to-change language). He would go on to light the way to understanding of the Indo-European language group. He was also an early experimenter with phonetic notation. Rask is generally regarded as the founder of the science of comparative linguistics.

Another distinguished student was Søren Kierkegaard, who studied theology at the University of Copenhagen from 1830 to 1840. Now recognized as the father of modern existentialism and a revolutionary in Protestant Christian thought, he would receive little notice outside of Denmark during his own life.

In 1874, Nielsine Nielsen, a schoolmistress, applied to become the first female student at the University of Copenhagen. She was admitted in 1875 over the protestations of Professor Matthias Saxtorph and others; Saxtorph denounced the "spirit of the time," which he called "Socialism, Emancipation, or Communism." Nielsen completed her program in medicine in 1884. In 1875 a royal decree had granted women admission to all examinations and degrees, except for those in the faculty of theology, to which they were admitted in 1905. In 1893 Anna Hude received the first doctorate awarded to a woman, but it was not until 1946 that a woman, Astrid Friis, assumed a faculty chair.

One of the most distinguished physicists of the twentieth century, Niels Bohr was associated with the University of Copenhagen as both student and faculty

member. He received his Ph.D. in 1911. The first person to apply the quantum theory successfully to the problem of atomic structure, he was awarded the Nobel Prize in physics in 1922. Bohr became a professor of physics at the university in 1916; in 1920, he was named director of the newly created institute of theoretical physics, a post he held until his death in 1962. Active in the Danish resistance against the Nazis in World War II, Bohr fled to the United States, where he participated in the Manhattan Project, which led to the creation of the atomic bomb. Bohr's reservations about the power of such weapons led to his receiving the Atoms for Peace Award in 1957.

The University of Copenhagen continued to function throughout the Nazi occupation, though teaching was suspended for a week in 1943 to protest the deportation of Danish Jews. Many university professors were active in the resistance; a number of the professors were arrested, and, at one point, placed in a camp for about a month. Students protested the Danish government's accommodation with Germany, singing Danish national songs, as well as the "Internationale" and "It's a Long Way to Tipperary"; the several students who were

arrested received suspended sentences. University people also helped with the underground press and the escape of the Danish Jews.

Students protested again in 1968, this time to claim a share of the power to determine university policies. In 1970, the 400-year-old system, in which professors ruled the university, was replaced with a system in which student representatives shared power. Historian Svend Stybe wrote that the ensuing negotiations led to "one of the most radical and pro-student university laws in the world."

Further Reading: *Copenhagen University: Five Hundred Years of Science and Scholarship* by Svend Erik Stybe (Copenhagen: Danish Ministry of Foreign Affairs, 1979) is a thorough history; however, sections require a working knowledge of Danish history. *A History of the Kingdom of Denmark* by Palle Lauring, translated by David Hohnen (Copenhagen: Host, 1960) is straightforward and covers its subject well, though it lacks an index.

—Robert Schoenberg

UNIVERSITY OF DUBLIN TRINITY COLLEGE

(Dublin, Ireland)

Location:	Forty-acre campus in the center of Dublin, capital of the Republic of Ireland.
Description:	Privately incorporated university, which receives substantial state funding. Approximately 11,000 full- and part-time students enroll for undergraduate and graduate degrees. Undergraduate admissions is through centralized state points system.
Information:	Secretary to the College Trinity College Dublin Dublin 2 Ireland (01) 677-2941
Visiting:	Guided tours of the major buildings and grounds, including the Old Library and Book of Kells, start from Front Gate, College Green, at frequent intervals daily from April to October. At other seasons, tours are available by arrangement; inquiries to the phone number above or at the Porter's Lodge, Front Gate.

Attempts during the fourteenth and fifteenth centuries to establish ■ university in the English colony in Ireland had been frustrated largely by the insecurity of the colony under continual pressure from the hostile Gaelic and Anglo-Irish aristocracies. The successful foundation by the English crown of a university in Dublin in the last decade of the sixteenth century reflected the recent extension and securing of English rule in Ireland by the Tudor conquests, which had placed some three-quarters of the island under effective English military control. The establishment of ■ university was regarded as a necessary complement to the victory in arms, an instrument in the next phase of the conquest: the consolidation of English authority by means of a concerted campaign in the religious, intellectual, and cultural spheres, directed against the two primary obstacles to the security of English rule, native Gaelic culture, and the Roman Catholic religion.

Accordingly, a letter from the Dublin Corporation (the municipal authority) to the Privy Council in London in November 1591, petitioning for ■ university in the city, described the projected institution as "a means to plant religion, civility, and true obedience in the heart of this people." In her favorable reply to the petition the following month, Queen Elizabeth I deplored the fact that, owing to the lack of a university in Ireland, many Irish

were wont to attend universities on the Continent, "whereby they have been infected with popery."

On March 3, 1592, Elizabeth issued a charter for "the College of the Holy and Undivided Trinity near Dublin." The college was to be located on a site one-half mile to the east of the city walls, on the lands of the former Augustinian monastery of All Hallows, dissolved under Henry VIII and its lands turned over to the Dublin Corporation in 1538. Construction of college buildings commenced promptly and the first group of students matriculated in 1594.

The queen made no provision for the endowment of the college; funds for its establishment were raised by public subscription. The college was granted liberty to acquire and to hold property in perpetuity, to derive income from the collection of rents on those properties, and to be exempt from all taxes and exactions. In 1597, the first land grants to the college were made by the crown; they consisted of some 3,000 acres in counties Kerry and Limerick recently confiscated from rebel Irish landowners. By the late nineteenth century, Trinity College would be ■ major Irish landlord, owning property in virtually every county, which fact contributed to the contemporary criticism of the college by nationalist opinion.

Under the terms of the charter, the college was incorporated as *mater universitatis* (mother university), which raises a complicated question of the relationship between Trinity College and Dublin University. Dublin University is unique among universities organized on the British model in that, throughout the four centuries of its existence, it has always contained but one constituent college: namely, Trinity. Furthermore, there is no organizational distinction between college and university; the institution has always been a single corporation, with one provost, one governing board, and one administration. For all practical purposes, then, Trinity College and Dublin University are different names for one entity. Whatever aspiration may have been contained within the rhetoric of the charter—that Trinity College might in time spawn sister colleges within the one university—from the start the institution founded by Elizabeth's charter has been empowered to fulfill both the collegiate function of instruction and the university function of examination and conferment of degrees. The college historians, R.B. McDowell and D.A. Webb, suggest that Trinity might be regarded as being both the last of the British medieval universities and the first of the British overseas colonial colleges to be emulated by such New World foundations as Harvard and Yale. Recognizing that capital would be scarce in ■ precarious frontier colony and that only one



University of Dublin Trinity College

college would likely be viable, the founders of Trinity made certain that their college was granted the status and function of a university.

Akin to Harvard and Yale in its location on a frontier of Anglo-Saxon culture and Protestant religion, Trinity was imbued in its early years with a combative Puritan ethos, derived in part through its close association with Trinity College in Cambridge, the intellectual furnace of English Puritanism. The chief mission of the Dublin college was the training of a learned Protestant clergy, equipped to minister to parishes throughout the colony and to proselytize among the native Catholics. In accordance with the official state policy of assimilation of the Irish, Catholics were encouraged to attend Trinity, in the hope of their thorough anglicization and conversion to Protestantism. From an early date, provision was made for extracurricular instruction in the Irish language, both

as a welcome to Catholics and as a better preparation of the ordinands for their missionary work. Such instruction was abandoned in the wake of the political strife and polarizations of the mid-seventeenth century. Apart from a brief period in the 1680s, Irish language instruction would not return to Trinity until the mid-nineteenth century; not until 1908 would the study of Irish count toward a degree.

The first provost, Adam Loftus, Archbishop of Dublin, presided in 1594 over a collegiate community of three fellows and three scholars. By the 1620s the college had grown to include 16 fellows, 7 senior and 9 junior, the senior fellows with the provost forming, as they do to this day, the governing body of the college, the board. In the 1630s the number of scholars was fixed at 70, although students other than scholars (who as members of the foundation possessed certain rights and privileges) were

admitted in ever-growing numbers. A four-year course of instruction led to the bachelor of arts degree. The great majority of students, being bound for the ministry, remained an additional several years to study for the master of arts degree and to contend for election to a fellowship while awaiting ordination and appointment to a clerical living. The college also awarded advanced bachelor's and doctor's degrees in divinity.

Although Greek was studied and Latin was the medium of instruction, the course contained next to nothing of the classical authors; as befitted a seminary, the ancient languages were regarded as the basis for the study of theology, moral philosophy, and scripture. The Reformation, not the Renaissance, was the chief influence on the curriculum. An early Trinity innovation was the importance accorded to lectures and tutorials as arenas of instruction, on an equal level with the hoary scholastic disputation.

In 1633, William Laud, Archbishop of Canterbury, was appointed chancellor of Trinity by King Charles I; he then initiated an effort to curb the college's independence by asserting tighter royal and Episcopal authority, as he had already done over the English universities. The result was the Laudean Statutes of 1637, a major revision and addendum to Trinity's original Elizabethan charter. The statutes assured stricter conformity to Anglican orthodoxy, and along with changes in curriculum brought to an end the Puritan temper of the college.

Laud's ally was his vice-chancellor, James Ussher, Archbishop of Armagh, former Trinity student, fellow, and Professor of Theological Controversies. The foremost scholar of Trinity's first century, Ussher, throughout his lengthy association with the institution, was devoted to the development of the college library. Ruined financially by the despoliations of the wars of the 1640s and 1650s, Ussher, upon his death in 1656, left to his daughter the legacy of his extensive personal library of some 10,000 books and manuscripts. Henry Cromwell, brother of the Lord Protector and Lord Deputy in Ireland, purchased the library in its entirety from Ussher's daughter for the state, in part out of contributions from the Cromwellian army in Ireland. Cromwell's intent was to use the purchase as the basis for a public library in Dublin that would also service a projected second college of Dublin University, to be named Cromwell College. With the restoration of the Stuart monarchy, the plans for both public library and second college were abandoned, but in 1661 the Irish Parliament persuaded King Charles II to donate the Ussher collection to Trinity College, a great enhancement of the college library, both in its breadth and in its numbers.

At about the same time, two incomparable medieval illuminated manuscripts, the Book of Durrow and the Book of Kells, were presented to Trinity College by Henry Jones, Bishop of Meath. The Book of Kells, regarded as the supreme work in the history of Irish art, is a handwritten manuscript text in Latin of the four gospels with supplementary material, rendered upon vellum (calfskin)

pages in a beautiful insular-style majuscule script. The text is embellished by various types of illustrations, including scenes from the life of Christ, portrait pages of the evangelists, zoomorphic ornament and drolleries, and intricately decorated initial letters. Crafted about A.D. 800, most likely in the scriptorium of the Irish monastery of Iona, off the west coast of Scotland, the manuscript—referred to in 1007 as “the chief relic of the western world”—was preserved for at least six centuries prior to its presentation to Trinity at the monastery of Kells in County Meath, 40 miles northwest of Dublin. It remains to this day the greatest treasure of the Trinity College Library.

During the Jacobite War of 1690, the college was occupied by the royalist army of James II for use as a military barracks and prison for Williamite sympathizers; nearly all the fellows and scholars had previously fled to England for refuge. Some random vandalism occurred, but through the efforts of two Catholic priests, the library's holdings were spared molestation. The Jacobites evacuated Trinity and the city of Dublin following their defeat at the Boyne (July 1, 1690), and the college community soon thereafter returned.

The eighteenth century, the most splendid epoch of the Anglo-Irish Ascendancy, was a period of intellectual stagnation at Trinity. Of the 25 fellows elected from 1716 to 1734, not one published a single work in his lifetime. This scholarly stasis earned for Trinity the derisive agnomen “the Silent Sister,” a sobriquet which, unfortunately, adhered to the college long after it ceased to be merited. The century was marked by a steady increase in the proportion of students intent on careers other than in the church, and the consequent development, especially in the latter part of the century, of such disciplines as classics, mathematics, medicine, and music.

The opulence of the Georgian Ascendancy left its enduring mark upon the physical face of the college through a program of extensive rebuilding which shaped the nucleus of the campus as it exists today. As a consequence, of the original Elizabethan and early Stuart structures, nothing remains, the oldest extant building being a red-brick residence hall, Rubrics, erected about 1700.

As a result of this vigorous spate of Georgian building, Trinity today can boast what art historian E.J. McParland has called “the finest *ensemble* of classical architecture in Ireland.” While no single one of Trinity's Georgian buildings can lay claim to unrivaled eminence in its own right, the west end of the college campus is remarkable as a masterful stroke of architectural planning, for the harmony with which the buildings relate to one another and to the open spaces. It is therefore a surprise that the ensemble of Front Square—one of the most pleasing prospects of synthetic scenery in Ireland—did not derive from a master plan, but evolved piecemeal throughout the eighteenth and nineteenth centuries, each architect building upon the opportunities inherited from his predecessors. The centerpiece of the prospect, the Campanile,

was not erected until 1855, on the site of an earlier range of buildings that had partitioned today's airy and expansive Front Square into two separate and comparatively cramped quadrangles.

The oldest and most important of the college's neo-classical structures is the Old Library, built from 1712 to 1732 to the design of Thomas Burgh. Commentators have remarked upon the weighty regularity and puritanical severity of this building, seen as redolent of the hard-headed, mercantile temper of the early Georgian age, in contrast to the more lightsome and graceful spirit of the later Georgian. The books, stored on the two upper stories, were insulated from the damp of the surrounding marshy ground (the River Liffey prior to later eighteenth-century reclamations came up to the college walls). In 1858, the flat plaster ceiling of the first-floor Long Room was removed and the two upper stories thereby thrown into one lofty space, surmounted by a new semicircular wooden barrel vault. The result was to augment the majesty of the Long Room; at 210 feet in length, it is one of the most striking interiors in Ireland, and described by McDowell and Webb as one of the two "most splendid university library interior[s] in Europe." (The other is the library of the University of Coimbra).

While the Trinity campus is renowned for its classical Georgian architecture, the finest single building at the college is of the nineteenth-century Italianate revival. The Museum Building (1853–57), the work of the same architects who raised the roof of the Long Room, was described by McParland as "one of the landmarks of Victorian architecture in Britain and Ireland."

The 1801 British Copyright Act extended to Trinity the status of a legal deposit, or copyright, library, entitled to claim one free copy of every printed item (books, pamphlets, maps, periodicals) published in the United Kingdom. The status was reaffirmed following the Anglo-Irish Treaty of 1921 and by subsequent copyright legislation in both Great Britain and Ireland. Despite early irregularities in the actual implementation of these rights, the privilege has resulted in the enormous growth and enrichment of the library's holdings. The resultant accumulation of books—the library currently adds 50,000 new volumes every year—required one-half mile of additional shelving. With a significant increase in student numbers (from 1,543 in 1939 to 3,500 in the 1960s), Trinity needed a new library building. The Berkeley Library (named for the eminent eighteenth-century philosopher and educator, who was collegiate librarian when work commenced on Burgh's Old Library in 1712) was completed in 1967 to the design of Paul Koralek. The first manifestation of twentieth-century modernism on campus, the Berkeley is notable for its cellular floor plan, affording secluded areas conducive to quiet study. Thirty years on, opinion concerning the Berkeley remains divided. The building indeed fulfills the original intention of erecting on campus a building as representative of the twentieth century

as the Old Library is of the eighteenth. As the two libraries stand at apices of a triangle with the museum around a connecting plaza, the viewer, in one glance, enjoys a visual lecture upon three centuries of Irish architecture.

The nineteenth century found Trinity in the forefront of innovations in new spheres of higher education. Early in the century, Trinity—which had provided instruction in medicine since 1711—introduced the practice of the clinical teaching of medicine. In partnership with the teaching hospital opened in Dublin in 1815, Trinity medical students were the first in the world to receive training in a hospital setting and in direct contact with patients. In 1841, Trinity opened one of the first schools of civil engineering in the world and established a professorship in the discipline. While at first a professional diploma course, in 1872 a degree of bachelor of engineering was introduced, the first degree course in Great Britain or Ireland outside the traditional faculties. An unusually large proportion of Trinity engineering graduates embarked on careers in the British overseas colonies, the advance guard of a large body of Trinity alumni of the nineteenth century who provided the sprawling reaches of the British Empire with administrators, jurists, doctors, and missionaries.

Modern research at Trinity in the physical sciences was pioneered by Sir William Rowan Hamilton (1805–81), appointed professor of astronomy in 1826 at the age of 21, a year before taking his B.A. A brilliant mathematician best known for his discovery of quaternions, Hamilton also accomplished important work in dynamics, geomagnetism, and optics. Later notable Trinity scientists include G.F. Fitzgerald (1851–1901), whose research into the contraction of moving bodies in the direction of their motion was employed by Einstein in developing the theory of relativity; and Ernest Walton (1903–95), Trinity graduate and professor, who at Cambridge in 1932 conducted crucial experiments in producing nuclear reactions by proton acceleration and thus launched the modern era of accelerator physics, for which work in 1951 he became the first Trinity alumnus to be awarded the Nobel Prize. Important work has been done in optoelectronics and laser physics, continuing a long Trinity tradition of research into the nature of light and vision. Trinity's second Nobel laureate was the startlingly innovative novelist and dramatist Samuel Beckett (Nobel Prize for literature, 1969), representative of the long history of literary attainment by Trinity alumni, extending back to such eighteenth-century figures as William Congreve and Jonathan Swift.

The 1800 Act of Union between Great Britain and Ireland designated Dublin University as a parliamentary constituency, entitled to return a member to the House of Commons at Westminster, a number later increased to two. Trinity returned an unbroken succession of Conservative and Unionist M.P.s, an apt reflection of the prevailing political ideologies within the corporation and among alumni and students. Most notable of these Dublin Uni-

versity M.P.s was Sir Edward Carson, who represented Trinity at Westminster from 1892 to 1918. A barrister who catapulted to fame with his cross-examination of another former Trinity student, Oscar Wilde, during Wilde's libel action against the Marquess of Queensberry in 1895, Carson rose to the leadership of the Unionist Party in 1910, and emerged as the most implacable foe of Irish Home Rule and the most important figure behind the retention of Northern Ireland within the United Kingdom.

Beneath this mainstream of Unionist opinion, there lurked throughout the nineteenth century at Trinity a minority undercurrent of nationalist sympathy, nurtured in the college debating societies and represented by such figures as Theobald Wolfe Tone, founder of the United Irishmen and progenitor of Irish republicanism; Robert Emmet, expelled from college in 1798 for his United Irishmen activities; the Young Ireland leader and journalist Thomas Davis; the Fenian leader John O'Leary; Douglas Hyde, Irish language scholar and founder in 1893 of the Gaelic League; and such literary figures as Wilde and John Millington Synge.

At the time of the Easter Rising of 1916, the college grounds possessed a small arsenal of rifles and ammunition in the custody of the college's Officer Training Corps. For fear that the store might be seized by the republican insurgents, and because of the strategic location of the campus in the heart of Dublin, the college buildings were held by a small number of the OTC cadets in the face of hostile sniper fire for two days until they were reinforced by regular British troops, who established in college a headquarters and emergency hospital for the duration of the week-long insurrection.

Under the terms of the 1922 constitution of the Irish Free State and under the later Irish constitution of 1937, Trinity was accorded representation in the Seanad, the upper (but less significant) house of the Irish parliament, the Oireachtas. Since 1937, Trinity has elected three Seanad members by vote of all registered graduates. In recent years, certain Trinity senators have been notable for articulating unconventional positions which might otherwise have gone unrepresented at the mainstream of Irish politics. Foremost among these has been Mary Robinson, Trinity professor and expert in constitutional law, who represented Trinity in the Seanad for some 20 years prior to her election as president of Ireland in 1990.

Women were first admitted to Trinity in 1904, despite concerns that their presence might imperil both the morals and the prudent marital choices of themselves and their male undergraduates. By 1914, women accounted for 16 percent of the student population. Progress in the realm of instruction and governance was slower: the first woman professor was appointed in 1934, the first woman fellow elected in 1965. In 1995, women comprised over 50 percent of the student body, but recent criticism has cited their marked under-representation among the fellows and on the board.

Throughout its history a thornier issue for Trinity than gender coeducation has been religious coeducation. The initial proselytizing welcome extended to Catholics evaporated in the anti-Catholic backlash following the Rebellion of 1641, as the earlier English policy of assimilation was supplanted by one of suppression. In the era of the Penal Laws, political and religious conformity was enforced at Trinity by the imposition of oaths of loyalty to the Hanoverian succession, abjuration of Jacobitism and repudiation of the Catholic doctrine of transubstantiation. These tests were required of all fellows (who were also required to take Anglican holy orders) and of all students prior to conferment of their degrees. Thus, while Catholics were effectively barred from college positions and from graduation, there was no formal ban to their enrollment in undergraduate courses (although college regulations required attendance at Anglican services), and during the eighteenth century a smattering of Catholics attended Trinity under these terms.

In 1794, as part of general relief legislation that sought to curry the loyalty of Irish Catholics to the English crown against the threat of a French invasion and to appeal to the perceived common interest of Catholic and Protestant against the revolutionary danger of French and Irish republicanism, the Irish Parliament abolished all religious tests for students at Trinity, thus opening the college's doors to adherents of all denominations and of none. The college remained an Anglican institution through retention of the Fellows' Oath, which included a repudiation of "pontifical religion." Over the next half-century Trinity became accepted as a suitable school for lay Irish Catholics, largely supplanting the old tradition of education in the Catholic colleges of the Continent. No less eminent a Catholic and nationalist figure than Daniel O'Connell, himself educated in the old manner at St. Omer in France, had his sons educated at Trinity.

In mid-century, however, attitudes hardened on both sides of the sectarian divide: Protestants concerned over a perceived Catholic encroachment in higher education represented by the Oxford Movement; Catholics alarmed by the assertive proselytizing activity in Ireland of evangelical Protestants. Within both camps there was also the growing tendency to equate Catholicism and Irish nationalism. At a synod in 1850, the Irish Catholic hierarchy warned its flock of the dangers of secular education and commenced an energetic policy of promoting a separate, but state-supported Catholic school system at all levels. Four years later a Catholic university, chartered by the Vatican, opened in Dublin. It was to this institution that those Irish Catholics who could afford the costs of a third-level education were strenuously encouraged by their bishops to attend.

In 1873, in response to growing pressure from English Liberals and nonconformists against the concept of denominational education at the third level, an act of the Westminster Parliament abolished all religious tests and

declarations of faith for any position at Trinity, save for admission to the divinity school (still essentially an Anglican seminary), thereby reconstituting the college as a nondenominational institution. Two years later, in 1875, the Catholic bishops intensified their objections to Trinity, condemning the introduction there of what they termed "purely secular education." This marked the beginning of the so-called ban by the Irish hierarchy on Catholic attendance at Trinity.

During the twentieth century, the ban was reiterated in increasingly severe terms. In 1961, the Archbishop of Dublin expressly forbade Catholic attendance at Trinity "under pain of mortal sin." From the 1940s, an official of the Dublin archdiocese was empowered to render decisions upon individual exceptions to the ban, which were granted only after grueling investigation into the circumstances of the request. Grounds for exception were limited to pursuit of a course of study unavailable in Ireland except at Trinity, or inability to meet the Irish language proficiency requirement of the National University, a circumstance ordinarily applicable only to students whose prior education had been received abroad.

In the late 1960s, the Irish government studied proposals to merge Trinity with University College Dublin into a new, two-college University of Dublin. In preparation for such an event, the two colleges prepared a plan for the allocation of certain faculties and disciplines between them to avoid redundancy. Under such a plan, the continuing of an absolute ban against Trinity attendance would have proven impossible. Hence, in June 1970, the Catholic bishops formally announced the removal of the ban. The merger plans eventually were dropped, but the removal of the ban was irreversible. In the ensuing years, the proportion of Catholic students at Trinity has steadily and rapidly increased. In the 1990s, some 75 to 80 percent of students are from Catholic backgrounds, a figure roughly equivalent to the proportion of Catholics in Ireland.

As Ireland's oldest institution of higher education, Trinity College continues to occupy a special place in the life of the nation. The evolution over the last century of

Trinity's complicated relationship to Catholic and to nationalist Ireland is typified in the careers of three of the college's alumni already cited: Edward Carson, whose Protestantism and uncompromising Unionism were dominant in pre-1921 Trinity; Douglas Hyde, son of a Protestant rector, champion of the Irish language and of a cultural nationalism which contributed immensely to the establishment of the independent Irish state, and who in 1938 was elected as Ireland's first president; and Mary Robinson, a Catholic, whose election as Ireland's seventh president in 1990 was widely seen as reflecting a liberalizing trend in contemporary Irish life and a more pluralist conception of Irish national and social identity. It is these latter values which Trinity College seems prepared to represent within a rapidly changing Ireland.

Further Reading: The standard history is *Trinity College Dublin 1592–1952: An Academic History* (Cambridge: Cambridge University Press, 1982) by R.B. McDowell and D.A. Webb; while the emphasis throughout is upon the college's development as an institution of higher education and scholarship, there is enough material regarding Trinity's broader place in Irish political and social history for the work to be authoritative in all areas. The college's quarter centenary was the occasion for the publication of two important volumes: *Trinity College Dublin: The first 400 Years* by J.V. Luce (Dublin: Trinity College Dublin Press, 1992), a briefer survey than McDowell's and Webb's that continues the account to the present day; *Trinity College Dublin and the Idea of a University*, edited by C.H. Holland (Dublin: Trinity College Dublin Press, 1991), an anthology by various contributors ranging widely over aspects of the college's history and traditions. Maurice Craig's classic *Dublin 1660–1860* (Dublin: Allen Figgis, 1952), an eminently readable architectural-cum-social history, contains valuable and well-indexed material on the college buildings and vignettes of college life in the eighteenth and nineteenth centuries.

—Lawrence W. White

UNIVERSITY OF DURHAM

(Durham, England)

Location:	In a restored medieval castle and at other sites in the cathedral city of Durham in northeastern England.
Description:	Established in 1832; formerly noted for training schoolteachers and priests of the Church of England, now a multi-faculty institution enrolling approximately 7,000 students in undergraduate and graduate programs.
Information:	The Registrar and Secretary The University Old Shire Hall Durham DH1 3HP England (0191) 374 2000

The University of Durham, established in 1832, occupies a special position in the development of higher education in the British Isles. It was the last British university to be created by a Christian church rather than the government or other secular private benefactors, and it maintained close links with the church even as Britain in general and other universities in particular became less and less religious. In addition, for many years it was the only university in northeastern England, maintaining a long association with the college which was to become the University of Newcastle. Thus, while its foundation set it apart from all later universities, its location also set it apart from the universities of Oxford, Cambridge, and London, in the prosperous metropolitan southeast of England, as well as from the separate education systems of Scotland and Ireland.

It is possible that there might have been a university in Durham long before 1832 if Thomas Hatfield, one of the wealthy and powerful prince-bishops who for centuries directly governed an autonomous "palatinate" from Durham, had not endowed a college at Oxford in around 1326 and provided scholarships for students from the city to go and study there. On at least two later occasions proposals were made for a university in Durham itself, in each case during a period when the bishop's palatinate powers were being challenged. In 1536 King Henry VIII's separation of the Church of England from the Catholic Church was met with an unsuccessful rebellion, known as the Pilgrimage of Grace, which the priests of Durham were suspected of encouraging. In retaliation, between 1541 and 1544 the bishops' powers were

reduced, the cathedral's treasures were confiscated, Hatfield's foundation of Trinity College, Oxford, was abolished, and plans were made for a university to take over the buildings of the dissolved monasteries in the city.

The proposal failed, but a similar scheme came much closer to fruition in 1657, eight years after the English Civil Wars had ended with the execution of King Charles I, the abolition of all bishoprics, and the creation of the short-lived British republic. A group of prominent Durham citizens petitioned the Lord Protector, Oliver Cromwell, for permission to use the cathedral and its attached buildings, then standing empty, for a new college; they got as far as selecting a provost and fellows (presiding officer and teachers) and planning a curriculum. The universities of Oxford and Cambridge, which then guarded their monopoly of the power to grant degrees, objected to the scheme, and Oliver Cromwell's son and successor Richard shelved the college.

In 1660 both the monarchy and the bishops were restored and no more was heard of a university until 1831, when the idea was revived by the dean and chapter, the governing body of Durham Cathedral. In 1832, with the support of William Van Mildert, the prince-bishop (then, like his successor now, an ex-officio member of the House of Lords), as well as Earl Grey, the prime minister, they secured the passage of an act of parliament and the granting of a charter by King William IV, allowing them to donate part of the cathedral's property to a university of which they would be governors and the bishop the Visitor, a largely ceremonial office. These arrangements were based on those at Christ Church, Oxford, where the college chapel doubles as Oxford Cathedral.

Durham is often referred to as England's third university, after Oxford and Cambridge. Yet it is also often referred to as England's fourth, on the assumption that London preceded it, for University College London had been opened in 1828. The difficulty can only be resolved according to one's definition of what a university is. Those who define a university as an institution which teaches advanced courses favor London over Durham. Those who emphasize the power to award degrees do the same, since the University of London, which absorbed the College in 1836, was granted that power the same year, while Durham received it a year later. But those who prefer the British legal definition of a university give Durham priority, since it received a royal charter four years before London did and, in any event, a college is not the same as a university.

The first classes at Durham, admitted from 1833 onward, were taught in a house owned by the cathedral (the



University of Durham

Archdeacon's Inn on Palace Green, near the castle). Professors of divinity, Greek, and mathematics, and readers in history and law were the first staff to be chosen by the dean and chapter, who also appointed a warden and a senate as executive officers. The extent to which these clerical governors involved themselves in the affairs of their new foundation, at least in its early years, is suggested by the fact that in 1835 they found it necessary to review and approve the purchase of a soup ladle, sugar tongs, and wine glasses for its refectory. As at Oxford and Cambridge in those days, officers, teaching staff and students alike were required to be members of the Church of England.

In 1836 Bishop Van Mildert died and the palatinate was abolished once and for all, a reform which was resisted by the dean and chapter even though it did not alter their positions in the cathedral or the university. In the following year, the university was given the right to award degrees in arts, theology, science, and—particularly fitting for an institution located near the coalfields and shipyards of northeastern England—civil engineering and mining. It was thus the first university in the British Isles to offer teaching in either of these last two subjects.

The general perception of the status of these degrees

may be gauged by the fact that for many years the university offered both courses leading to its own degrees and courses leading to certificates which permitted students to take examinations at the University of London. The Bishop of Durham arranged with Lord John Russell, prime minister, to have this apparently embarrassing connection kept secret, even though it was standard practice for most of the university colleges founded in England during the nineteenth century.

Meanwhile the number of students at the university, whether on Durham degree courses or London certificate courses, continued rising at an unexpectedly rapid rate, making it necessary to provide more and more accommodation for them. The castle of the former prince-bishops, started in 1072, largely rebuilt in the fourteenth century but long left in ruins, was given to the university in 1837, restored to a usable state, and then opened for both teaching and residence in 1840. Bishop Hatfield's Hall (now Hatfield College), named in memory of the fourteenth-century prince-bishop, was opened in 1846, in a former inn, as a residence for poorer students; and another residential building, Cosin's Hall, was added in 1851, only to be closed down for lack of funds in 1864. In addition,

Saint Bede's College, a teacher training institution loosely affiliated with the university, was established in 1839, and Saint Hild's College, a sister institution to Saint Bede's which trained women to become schoolteachers, was opened in 1858.

The university's provision for the study of science, through lectures on engineering and mining and, from 1841, through the work of the university's astronomical observatory, was relatively meager, for Durham's academic strengths were in the arts and, overwhelmingly in terms of student numbers, in theology. Scientific provision tended to become the special preserve of the university's sections located at Newcastle upon Tyne, 16 miles north of Durham, which had developed after 1852 when a small medical college in that city was affiliated with the university, culminating in the opening of a College of Physical Science in 1871 and formal incorporation in 1874. The intention appears to have been to attract those young men from northeastern England who were considering a business or engineering career into academic training in the region rather than having them train in Germany or other continental European countries, as had been customary. The college was supported by such prominent local patrons as the banker Thomas Hodgkin and the steelmaster Lord Armstrong, and it appointed a professor of mining, one of the first in Britain, in 1880; however, its alumni, armed with University of Durham degrees, tended to be greeted with suspicion by many of the shipbuilding and engineering firms of the region, then one of the most advanced industrial centers in the world.

In 1871 Durham abolished the residential requirement which it had copied from Oxford and Cambridge, although in practice most students continued to live in accommodations either provided or licensed by the university authorities. More important, in the same year it joined with Oxford and Cambridge (again) in abolishing all religious tests for admission to its courses or membership in its senate, even though at Durham that body continued to be appointed by governors who were priests of the Church of England. (In contrast, London and all the universities founded later never had such tests.)

In 1895 Durham received formal permission from Queen Victoria to award degrees to women and did so for the first time the following year, 16 years after the University of London had become the first British university to do so, but 24 years before Oxford and fully 52 years before Cambridge. The first women alumnae were in fact trainee schoolteachers from Saint Hild's College, which perhaps suggests that the notion of women entering any profession other than teaching had still not reached the more conservative northeast of England, some 20 years after the country's first women doctors had started practicing in London.

The opening of a women's hostel, known as Abbey House, in 1899 was perhaps a sign of slightly more radical intentions, but women continued to be a small minority in the university for many more years to come. The

numerical dominance of male theology students was reinforced by the opening of two more residential halls which were then reserved for their exclusive use, Saint Chad's Hall in 1904 and Saint John's Hall in 1909. In 1919 the three halls and the women's hostel were all renamed colleges—Abbey House became Saint Mary's, and the residential section of the castle was renamed University College. It should be noted that this was a purely nominal change, since, unlike the colleges of Oxford, Cambridge, or London, those at Durham have no teaching facilities of their own. At this stage the university was still housed entirely within buildings in the historic center of Durham, on a peninsula all but surrounded by the river Wear and in the shadow of the cathedral, although all the buildings which it acquired or had constructed after 1919 are located elsewhere in the city.

Meanwhile the longstanding relationships with the dean and chapter of Durham Cathedral and with the colleges at Newcastle upon Tyne had been placed on a new footing. In 1904 the College of Physical Science was renamed Armstrong College in memory of one of its chief benefactors, and in 1908 the institutions in both cities were reorganized into a federal University of Durham, composed of the Durham and Newcastle Divisions, as they were known, and with a new charter, resembling those of other British universities, providing for supervision by the city councils and local worthies as well as the cathedral authorities.

Unfortunately, although hardly surprisingly, these rearrangements of the academic furniture did little to endear the Newcastle colleges to the local magnates who might have patronized them but who still generally retained an inveterate hostility to what they saw as over-educated upstarts. Their attitude to Armstrong College in particular stands in sharp contrast not only with the generosity of those businessmen who endowed universities elsewhere in England and (even more so) in continental Europe, North America, and Japan, but also with that of the coal miners' associations, the leading labor unions of the region, which, in spite of the huge financial losses they had sustained during the General Strike of 1926, managed to raise enough money the following year to endow a research laboratory at Armstrong College.

Curiously, this new facility in Newcastle was built three years after the opening of the Dawson Building, the first of several in Durham which house scientific departments, an indication that, in spite of attempts to plan the federal university as a single unit, they were already competing to attract students in the same fields as early as 1924. Thus after 1937, when the Newcastle College of Medicine and Armstrong College were merged to form King's College, Newcastle, the new institution remained formally within the Durham federation but developed its own courses in the arts and social studies as well as in the natural sciences.

During World War II the industrial districts of Newcastle were bombed, but the university, in both cities, was

undamaged. Both divisions were considerably reduced in size as most of their teachers and students (male and female) were conscripted for the war effort; but they resumed the pattern of expansion after 1945, encouraged by governments which, for the first time in British history, actively planned and helped to finance the provision of higher education formerly left almost entirely to the churches, local governments, businessmen, and other private benefactors. In Durham in 1959 a footbridge was built over the river Wear (using university funds although it is open for general use) in order to relieve pressure on the medieval Prebends Bridge. This event, which occurred just as the university authorities were beginning to plan a formal separation of the Durham and Newcastle colleges, may be taken to mark the beginning of a new phase in the university's history, as the Durham colleges and departments expanded, occupying more and more sites on both sides of the river and offering a wider range of subjects than ever before.

King's College, Newcastle was formally separated from the Durham colleges and became the University of Newcastle upon Tyne in 1963. In the meantime the remainder of the university, which retained the original title, had already opened Grey College for men in 1959, the Gulbenkian Museum of Oriental Art and Archeology in 1961, and its own Physics Building in 1962. In addition, Saint Aidan's Society for women (which, like Saint Cuthbert's Society for men, had been created in 1947 to cater to those students, around one-third of the whole body, who were not resident in any of the colleges) became a college in 1961. It is now noted for its dining hall and other buildings designed by Sir Basil Spence, the prominent modernist architect best known for designing Coventry Cathedral.

In 1963 the university was able to bring its administrative offices together on one site after purchasing the Old Shire Hall and other buildings vacated by Durham County Council. New colleges were added to the university—Van Mildert College for men in 1966, Trevelyan College for women in 1967, and a pre-existing Catholic theological college, Ushaw College, which was affiliated in 1968—and such new departments as applied physics and electronics, engineering science, economics, politics, and anthropology were also added during the 1960s, while the business school was set up in 1967. The latest addition to the university's residential provision, Collingwood College, opened in 1973, and Saint Hild's and Saint Bede's Colleges, both still owned by the Church of England rather than by the university, were merged as the College of Saint Hild and Saint Bede in 1976 but were then incorporated into the university in 1979. Most recently, in 1992, the university entered into a joint venture with Teesside University to manage a new institution, University College, at Stockton on Tees, a small coastal city south of Durham.

As it prepares to enter the twenty-first century the University of Durham has largely abandoned many of its traditions. Its connection with Durham Cathedral has dwindled to a ceremonial and sentimental level; it is no longer dominated by theology students but instead competes with other leading British universities across the whole range of academic disciplines, and among its 13 colleges only Ushaw College for men and Saint Mary's College for women retain gender discrimination in admissions. Nevertheless certain distinctive features remain. For example, like Oxford and Cambridge, but unlike most universities founded later, it admits students on the basis of interviews (by the colleges, not the university) as well as school examination results, it assesses their work almost exclusively by written examinations rather than by continuous assessment, and it assigns them to membership of its constituent colleges, albeit at Durham these are not teaching institutions. Accordingly it has acquired an informal reputation as a university mainly interested in competing with Oxford and Cambridge and eager to admit students rejected by those ancient foundations, although this is probably an unfair aspersion on all but a few of its approximately 7,500 students (including around 1,000 postgraduates).

Throughout its history the University of Durham, unlike the universities of Oxford, Cambridge, or London, has produced few alumni famous in politics, business, or the arts. Instead, like the universities in other parts of England outside the southeast, it has been more concerned with training priests, schoolteachers, doctors, engineers, and other professionals of the type who are much less celebrated but are at least as essential to the maintenance and improvement of society and culture (perhaps even more so). From the 1960s onward, like all other British universities, it has steadily increased its student numbers and the range of its courses in order to compete in national and international academic leagues. If, as a result, it has moved further away from its founders' intentions than any other British university established in modern times has had to, that is an indication both of how homogeneous British higher education is becoming and of how unusual Durham originally was.

Further Reading: J.T. Fowler's *Durham University: Earlier Foundations and Present Colleges* (London: Robinson, 1904) provides illuminating information about the university's earliest days, while C.E. Whiting's *The University of Durham 1832–1932* (Durham: n.p., 1937), published in honor of the university's centenary, brings the story of the university a bit further along. Both have been out of print for some years but may be obtainable at larger libraries.

—Patrick Heenan

UNIVERSITY OF EDINBURGH

(Edinburgh, Scotland)

Location:	In Old Town, Edinburgh, Scotland.
Description:	A public university enrolling approximately 17,000 students in undergraduate, graduate, and professional faculties.
Information:	The University of Edinburgh Old College, South Bridge Edinburgh EH8 9YL Scotland (0131) 650 1000
Visiting:	For information on campus tours, contact the Information Office at the above address.

The University of Edinburgh is Scotland's fourth oldest university, the first university founded in Britain after the Reformation, and Britain's first municipal university. Higher education began in Edinburgh in the mid-sixteenth century, when Mary of Guise, regent of Scotland, appointed two eminent scholars, who were paid out of the royal treasury to give public lectures in Edinburgh on canon and civil law, Greek, and the sciences. The town provided the Magdalen Chapel in the Cowgate for a series of lectures which lasted two or three years. This transitory foundation demonstrated the desirability of a university in Scotland's capital.

In 1582, the town council obtained a royal charter from James VI to establish a college of law, known as the Tounis (Town's) College. James also gave the college the income from an ecclesiastical benefice. The town council was also aided in establishing university finances by getting control of part of a legacy which had been left in 1558 by Robert Reid, bishop of Orkney. The charter of King James authorized the college to establish all faculties, although this document did not mention degree-conferring powers. While arts degrees were issued from the beginning, their legality was not made certain until an act of 1621. In 1617 James VI declared that it should be known as King James's College for all time. Over the main entrance to the university's Old Quadrangle the inscription "James the Sixth's Academy" may still be seen.

Instruction began at the college in 1583 under Robert Rollock, ■ Saint Andrew's graduate. Because many of the would-be students could not understand Rollock's lectures, which were given in Latin, a second appointment was made, that of Duncan Nairne, graduate of

Glasgow, as Latin tutor. Nairne's students could enter the degree program after a year of Latin tutelage and passage of an examination.

Instruction was done under the medieval regenting system, whereby each instructor taught the entire body of knowledge rather than a single specialized field. It is surprising that the university continued this practice because the Protestant reformers had advocated its abolition. The Edinburgh town council under the leadership of the local ministers had founded the college with the intention that it should produce good Christians who would be intelligent and responsible citizens using the academic views of Calvin. Under regenting, students should have a single instructor for their entire four-year academic course. In practice, faculty turnover was high and few teachers lasted as long as their students, largely because professors could find better jobs elsewhere.

The college soon had more students than any Scottish university had ever had. While intended as a residential college, from the very beginning, most of the students lived at home. This was in conformity with the beliefs of the Scottish religious reformers that virtue is best inculcated in the home. It was also necessary because the college had inadequate provision for boarders.

Even in its early years, the college had an international reputation and attracted a considerable number of foreign students, primarily Huguenots and English Puritans with the occasional Irish student. Most domestic students came from Edinburgh and southeast Scotland.

Until 1617, the university was located in "the Duke's House," built by James Hamilton, the second Earl of Arran (who was also known by his French title, Duke of Châtellherault), and buildings connected with the adjacent ruined Kirk O'Field, where Lord Darnley had been murdered. After 1616 the university constructed its first purpose-built building, a two-story structure serving as common hall and library. In 1642, ■ new library was begun. It included student reading rooms, available for an annual fee. Building continued throughout the century in a piecemeal fashion, producing a jumble of undistinguished buildings.

For its first 300 years, the university was indeed the town college. It was administered by the town council, which gradually delegated administration to college officials while retaining the right of final approval. The town funded the university from three major sources: (1) pre-Reformation church benefices, (2) a monopoly on funeral pall rentals, and (3) benefactions. The income was not great and was largely devoted to salaries and building maintenance. The principal and professors were supported



University of Edinburgh

by student class fees, and found it necessary to supplement these inadequate incomes with outside positions. The town council's oversight did not extend deeply into academic affairs, and the principal and professors had much freedom to improvise and innovate as they saw fit, though the town council kept an eye on the college, through appointment of rectors and, later, chancellors of their choice.

Despite the civil turmoil of the seventeenth century, the college continued to grow. In 1662, new students exceeded 100 for the first time and the total student body may have exceeded 500 during the Restoration. The standards for graduation were rigorous and attrition among the students was high. Usually no more than 50 percent of students were able to complete their degrees in the normal time. In the later seventeenth century, examination techniques were modified by group interrogation and a group thesis, to enable, in the words of D.B. Horn, "the doltish sons of influential parents" to obtain degrees. Some students augmented their studies by learning shorthand, French, German, Dutch, and Polish, all of which were taught in town.

The college in the seventeenth century was alternately dominated by Presbyterianism and Episcopalianism. Each change of theology was marked by the flight of students and the punishment of dissenting professors. Among the most notable events in this period was a protest in 1680 in the wake of the Popish Plot. The students, led by a self-titled "Secretary of State to all our Theatrical and Extraliteral Divertissements," publicly burnt an effigy of the pope in spite of the opposition of the college authorities, the town guard, and the regular army. The students involved were charged with treason by the Privy Council, as the Duke of York, the heir to the throne and a notable papist, was in residence at Holyrood Palace at the time.

As a result of this incident, the college was closed and only reopened when the students and their parents produced signed bonds of good behavior under pain of expulsion. Similar bonds were required of all incoming students for some years.

The college entered the eighteenth century as a pillar of Whiggery and the Presbyterian cause. The parliament of William III made a grant to the college to establish a chair of ecclesiastical history and provide divinity bursaries. In 1703, Queen Anne provided a further grant. These were the first substantial grants by the government to the college since the benefice grant of James VI.

The main interruption of university life during the century came when the Jacobite forces of Bonnie Prince Charlie occupied Edinburgh in 1745. The university closed from June 1745 to December 1746 as many students and faculty left to join the Hanoverian cause.

Edinburgh, formerly a respectable arts college and divinity school, became one of the great universities in Europe through the leadership of principals William Carstares and William Robertson. In 1708, the archaic practice of regenting, wherein a professor would teach all knowledge, was replaced by specialized teaching. The

quality and range of subjects taught, the ability of the professors, and the flexibility of the curriculum attracted students from Europe and the American colonies. Most of the foreign students were upwardly mobile members of the middle class, with a smattering of the nobility. Many were dissenters attracted by Edinburgh's policy of not requiring religious or political tests of students from outside Scotland. In 1789 Thomas Jefferson declared that for science, "no place in the World can pretend to a competition with Edinburgh." Benjamin Franklin had been even more sanguine in 1776: "At this time there happen to be collected a set of as truly great men, professors of the several branches of knowledge, as have ever appeared in any age or country."

Among the chairs established in the eighteenth century were: mathematics, public law, civil law, Scots law, universal civil history, rhetoric, belles lettres, medicine, anatomy, chemistry, midwifery, and natural philosophy. At the same time, old subjects were given new direction; Greek moved toward linguistics; natural philosophy embraced Newton before he was accepted at Cambridge.

A dozen medical doctorates were given in 1750, over 100 by 1800, and as many as 140 in the early nineteenth century. And yet this does not accurately depict the number of medical students. In the 1780s, 400 to 500 students were studying medicine annually.

The intellectual ferment spearheaded by the University of Edinburgh spread throughout Scotland in the form of the Scottish Enlightenment, and the university played a major role in providing the basis for Voltaire's comment: "We look to Scotland for all our ideas of civilization."

The meager finances of the university became its strength. Unlike the English universities which paid their professors living salaries from the universities' ample endowments, Edinburgh's professors received token salaries. Their livelihood depended on class fees collected from students, and they supplemented their income by writing. Excellent teaching was imperative to attract as many students as possible, and publication was often a necessity for a comfortable life. At the same time the university had a flexibility which permitted professors to offer courses in fields outside the scope of the older universities, such as literary criticism, psychology, political economy, sociology, and aesthetics.

Among the brightest stars in Edinburgh's galaxy of professors and alumni are included: Alexander Monro secundus, discoverer of the function of the lymphatic system and structure of the nervous system; the founders of the philosophy of common sense; Joseph Black, discoverer of latent heat and discreditor of phlogiston; Adam Ferguson, a founder of sociology; Francis Home, first to apply chemistry to agriculture and discoverer of the respiration of plants; William Rutherford, the discoverer of nitrogen; and the philosopher David Hume (whose conservatism is said to have impelled more than a few students to migrate to Glasgow's more liberal university).

Other Edinburgh luminaries include: biologist Charles Darwin, and his grandfather Erasmus Darwin; physicists Sir Edward Appleton and James Clerk Maxwell; Lord Joseph Lister, who introduced antiseptic surgery; authors Oliver Goldsmith, Sir Walter Scott—"The Wizard of the North," Robert Louis Stevenson, and Sir Arthur Conan Doyle (who is rumored to have modeled Sherlock Holmes on one of his medical lecturers); John Witherspoon, the only clergyman to sign the American Declaration of Independence and the introducer of literary studies into American higher education as president of Princeton University; architect Robert Adam; James Hutton, father of modern geology; Peter Mark Roget, compiler of *Roget's Thesaurus*; Ella Pringle, the first female member of the Royal College of Physicians; surgeon Elsie Inglis; and prime ministers Palmerston and Russell.

Edinburgh was a dazzling fixture of the Scottish Enlightenment. As an alumnus, Sir R.J. Mackintosh wrote in 1835: "it is not easy to conceive a university where industry was more general, where reading was more fashionable, where indolence and ignorance were more disreputable. Every mind was in a state of fermentation."

Edinburgh reached its apogee during William Robertson's principalship. Robertson was the most eminent historian of his time and a founder of the Royal Society of Edinburgh. Robertson revived the senate, established committees to deal with urgent problems, and implemented their recommendations with infrequent dissent. Among his greatest contributions may have been initiating the rebuilding of the university.

The university's fabric had been crumbling for a century when the American visitor, Henry Merchant, declared its buildings "a most miserable musty pile scarce fit for stables." By 1760, a burgeoning student population made the situation critical. Piecemeal construction began. A new anatomy theater was erected in 1764 and the library of 1642 was raised a story. The senate in 1768 approved a committee report on new buildings needed. The university needed 14 classrooms, rooms for professors, a faculty meeting room, a chemical laboratory, a common hall, a new library, and a museum. The old library expanded a quarter century before was filled to overflowing. The town council enthusiastically tried to raise funds by subscription and failed. Only a chemistry classroom and laboratory were constructed.

In 1789, the town council raised £15,000 by subscription and began laying the foundation of the new college, based on the designs of Robert Adam, an alumnus and the leading architect of his day. In February 1790, a new anatomy theater was begun, incorporating "subterranean passages" for the surreptitious conveyance of dissection subjects. However, with the coming of the French wars, most of the subscriptions were never paid and Adam's planned buildings, modified and reduced through economic necessity, were not completed until 1832, using government funding.

From 1793 to 1858, the university consolidated and retrenched as the university senate wrestled with the town council over control of the university, a struggle which only ended with the Universities (Scotland) Act of 1858 which made Scottish universities the responsibility of the state. The wars increased the demand for people useful to the military. Emphasis was put on medicine. The government forced the college to establish chairs of forensic medicine, military surgery, and clinical surgery. Arts became static. Chairs in Celtic literature and antiquities (1807) and in intellectual power (1823) were rejected.

The student population began to decline after 1820. A senate committee in 1840 noted:

Every profession is overstocked. There is not the same demand for the services of educated men as in former times. Schools, academies, colleges, have started up in every corner of the land. . . . Old establishments cannot afford to run the same race of popularity, and when they have attempted it, it has been at the expense of their dignity and usefulness.

Following a troubled half century for the university, the Universities (Scotland) Act of 1858 transferred university funding to the government, placed the institution on a firm financial foundation, and moved it toward modern needs. The curriculum was revised and, in 1889, parliament authorized the university to admit women, 20 years after the idea had first been proposed.

Today, the university, one of the largest in the United Kingdom, is still centered on its original site and maintains a close relationship with the town. Most visitors to Edinburgh's picturesque Old Town are unaware that students comprise about a quarter of its population. The 17,000 students are enrolled in eight faculties: arts, divinity, law, medicine and dentistry, music, science and engineering (including agriculture), social sciences, and veterinary medicine—staffed by 2,500 academics.

Edinburgh, while distinctly Scottish in character, continues to be the most cosmopolitan university in Scotland with high educational standards and a strong reputation in research. While the bulk of the students come from England and Scotland, about 10 percent come from Europe and the larger world. Approximately half the students are women.

The university has recently stated its mission as providing learning and inquiry toward the development of the individual, the health of society, and the national economy. Its international reputation is high. Its research and development projects provide almost a quarter of university income, about £46 million. The university is an active participant in cooperative projects with industry, business, and professional societies. Areas of particular strength include languages, medicine, microelectronics, biotechnology, and computer technology.

The university has invested heavily in high-technology such as artificial intelligence and speech technology, and has established ■ commercial subsidiary, UnivEd Technologies Ltd., to provide a liaison between the academic and commercial sectors. With a pool of 2,500 academic specialists from which to draw, UnivEd provides consultancy, state-of-the-art technology—including ■ Cray T3D, the most powerful supercomputer in Europe—and practical training for professionals, the government, industry, and business. UnivEd was awarded the Queen's Award for Expert Achievement in 1994.

Edinburgh is currently undertaking cooperative projects to improve the other sectors of Scottish education, expanding the university's services to non-traditional students and increasing its emphasis on postgraduate education. Postgraduates currently make up 27 percent of its population.

The university also has strong links with the local and national community. Edinburgh's continuing education

program enrolls over 10,000 annually in courses, conferences, study tours, and summer programs. University Settlement runs community projects providing services to the disadvantaged, young, infirm, and elderly.

Edinburgh's stated aim is to promote diversity while maintaining excellence, an ongoing process of which it seems fully capable. In 1995, higher education funding council assessors placed Edinburgh in the highest level of British university education, with 75 percent of departments rated in the two highest ranks for research quality.

Further Reading: For a general historical overview, consult D.B. Horn, *A Short History of the University of Edinburgh 1556–1889* (Edinburgh: The University Press, 1967).

—Edward S. Margerum

UNIVERSITY OF FLORENCE

(Florence, Italy)

Location:	Florence, Tuscany, a region in central Italy.
Description:	A state university with an enrollment of approximately 55,000 students.
Information:	Università di Firenze Piazza San Marco 5 Firenze Italy

Universities are considered one of the most innovative cultural advances of the thirteenth century. *Regnum*, *sacerdotium*, and *studium* are listed as the powers governing the world, according to Alessandro di Roes, at the end of 1200. However, in Florence—home to Dante, father of the Italian language—there is no trace of such an institution. Although we have proofs of the existence of schools with public teaching, Florence lacked a *studio* (or university) which was the main cultural institution of the Middle Ages.

It is only in the fourteenth century, a period in which the university tradition becomes less significant, that Florence sought to obtain a *studio*. On May 14 and 15, 1321 (rather late compared to other Italian cities), the city of Florence decided to create a *studium generale* with colleges of law, medicine, and fine arts. The *studio* had the same characteristics and regulations as the *studio* of Bologna. Among the most important regulations were: (a) the founding of a specific committee: the future *Ufficiali dello Studio*; (b) the establishment of a special academic fund; (c) a request to the pope and the college of cardinals to give permission to representatives of the clergy to attend the *studio* as students without losing their ecclesiastic benefits during their studies.

In Florentine academic history, the period from 1321, the year in which Dante died, to the end of the century was marked by a continual succession of deaths and resurrections. As with the University of Naples, the *studio* in Florence was created by political parties who alternated stages of strong support with periods of complete neglect.

In 1324 the *comune*, or city-state, of Florence rented various houses to accommodate a *studio* which was soon closed. It was reopened in 1349, after the plague, on a street still called *Via dello Studio*.

On May 31, 1349, Florence obtained from Pope Clement VI an official document founding the *studium generale*. In this document the pope authorized opening for the first time in an Italian university a faculty of theology.

Only in 1360 did the prestigious *studio* of Bologna open such a faculty, when Francesco di Biancozzo de' Nerli had already received a great deal of notoriety as the first graduate in theology from the *studio* in Florence. Francesco Petrarca was one of the many celebrated intellectuals whom the Florentine *studio* tried to obtain. Petrarca, however, declined the invitation.

In 1364 the Emperor Charles IV conferred on the *studio* in Florence the same recognition and privileges that the other *studi* in Italy already had obtained. The year 1366 was a prosperous one for the Florentine *studio* due to a general growth of interest in the improvement of the institution. Among its many eminent lecturers, Boccaccio stood out with his teaching of Dante.

At the end of the fourteenth century, the *studio* drew up new statutes, and its organization became more complex and efficient. Greek was introduced in the academic curriculum, and the field of medicine received more attention from the *comune* of Florence. Unfortunately, this condition was ephemeral and a series of ups and downs characterized the life of the *studio* until 1472, when Lorenzo de' Medici decided to move it to Pisa.

Although in the fifteenth century Florence upheld a cultural supremacy, Pisa was the center of academic education. Yet, there were prolific interactions between the *studio* and the group of intellectuals (*eruditi*) and artists living in Florence, as well as exchanges among the *studia humanitatis* such as linguistics, rhetoric, philosophy, and science with the city's artistic community.

The *accademie*, competing with the *studio* as centers for discussion, started as spontaneous meetings among the intellectuals and became unconventional study centers and research institutes that departed from the traditional medieval academic structures. Therefore, the *accademie* represented a constant point of reference which stimulated and enriched the cultural environment and the scholars, bringing together arts, letters, and science.

In the 1500s, even though the *studio* kept functioning regularly, the *accademie* became the more relevant and vital intellectual centers. The establishment of the absolute power of the Medici with Cosimo I meant the official recognition of the *accademie*. The *studio* itself accommodated three *accademie*: the Florentine *accademia*, the Crusca (founded in 1582), and the *accademia* of the Apatisti.

Few documents remain to testify to the cultural events of the 1600s. Evangelista Torricelli, the inventor of the barometer, ruled the faculty of mathematics, as a follower of Galileo. Many other famous scientists taught at the *studio*. In 1657 the first scientific *accademia* in

western civilization was founded, based on Galileo's experimental method.

In the 1700s, although numerous and well-known historians could be found in Florence, the teaching of history was absent, except for a class in "sacred and profane" history. The fact that two history professors, Anton Francesco Gori and Giovanni Latini, gave lessons at home, highlights the lack of organization of the *studio* in this field.

The many historians present in Florence at this time preferred to share their knowledge in the *accademie*, such as La Colombaria, than in scholastic institutions. In middle schools and high schools, the only history taught was that taken from the classics. Information about medieval and contemporary history was taken from historians better known as literary scholars, such as Machiavelli and Guicciardini.

During the French-Bourbon domination, at the beginning of the nineteenth century, history was still not present as a discipline in university institutions, although it was taught in the *Accademia delle Belle Arti* of Florence by Gian Battista Niccolini.

Only in December 1859 were innovative reforms introduced by Cosimo Ridolfi, the minister of public education of the Tuscan Temporary Government. The *Istituto di Studi Superiori pratici e di perfezionamento* created a tenure position for history among the 11 positions already existing in the department of philosophy and philology.

This *Istituto di Studi Superiori* was intended as a post-university school and consisted of four sections: legal studies, philology and philosophy, medicine, and natural science. The intention was to create a school focused on specialization and research. It did, indeed, succeed in attracting professors and students from all over Italy. European scholars came to Florence not only to consult the *Istituto's* libraries and archives, but also to meet the many Italian scholars attending the *Istituto*.

According to Eugenio Garin, "The doctors who created it [the *Istituto*] went back to the 'sperimentalismo' of Galileo's tradition, and the new course of Florentine culture moves itself dialectically between natural and historical sciences, in order to reach a synthesis by studying nature with an historical approach and history from a scientific one."

The *Istituto* became, with its energy and dynamism, the center of discussion between the old and the new and it was to leave a deep trace in the future of Italian culture. Of the above mentioned four sections in which the *Istituto* was divided, the best structured were those of philosophy and philology and medicine. Only in 1874 was the teaching of Italian literature activated by Adolfo Bartoli, the real initiator of the Italianist tradition in the *Istituto*. From his schools, many of the best scholars and philologists of the next generation were to come. Bartoli's main merit was the development of the "historical method" which was applied successfully to documents and texts on the origins of Italian literature.

After Bartoli's death in 1894, Guido Mazzoni succeeded him as teacher of Italian literature in the *Istituto di Studi Superiori*. Mazzoni was professor for 40 years, first in the *Istituto* and then in the *Facoltà di Lettere* (Liberal Arts College) after the transformation of the *Istituto* in *Regia Università* at the beginning of the 1924–25 academic year. A figure of outstanding culture and artistic sensitivity, Mazzoni succeeded in blending together the continuation of the Florentine "historical school's" tradition and the new cultural environment in Florence. As the secretary of the *Accademia della Crusca*, he defended the necessity of keeping this *accademia* alive.

Between 1924 and 1930, the intervention of fascism in the new university structure was widespread throughout the country and quite significant. Until 1940, the presidents (*Rettori*) of the fascist university, first Bindo De Vecchi and then Arrigo Serpieri, insisted on the development of the technological and organizational aspects of the university. Serpieri in particular was the personification of the regime in the world of academics. In the academic year 1938–39 Serpieri applied the racial laws by dismissing six Jewish professors. Among them were the philosopher Limentani, who died during his voluntary exile, and the historian Salvemini, who was forced into a long exile in the United States. Under the presidency of Serpieri, the "Cesare Alfieri" school became the *facoltà* of political sciences with the founding of the *cattedra del fascismo* (chair of fascism) and the strengthening of the socio-political element in every discipline. With both De Vecchi and Serpieri, a militarization of the university took place in concurrence with the wars in Africa and Spain.

In spite of strong pressure from the fascists, the University of Florence was able to maintain continuity in research and study throughout the regime's 20 years, according to the tradition of the old *Istituto di Studi Superiori*. Fascist propaganda touched only the surface of the academic structure, affecting only marginally the technical and scientific aspects of the University of Florence. The university succeeded in maintaining its dignity and coherence.

In 1934, Mazzoni retired and Attilio Momigliano, from the region of Piemonte, took his place as professor of Italian literature in the college of liberal arts in the University of Florence. He had a strong influence on the university, reconciling his background in the school of history in Turin with the new perspectives opened by the idealism of literary critic Benedetto Croce. Under his supervision, a new Italian generation of literary criticism was formed. After only four years, Momigliano, of Jewish origin, had to leave his position due to the application again of the racial laws. He never stopped his literary activities, and after World War II he resumed his teaching with a large following of students. In 1938, Giuseppe De Robertis substituted Momigliano. De Robertis came to Florence to collaborate at the *Voce*, the literary review created by the two Italian writers and critics Prezzolini

and Papini. With De Robertis, the innovative wave of the new critical methods—applied both to the classic and to contemporary literature—entered the university.

Both Momigliano and De Robertis gave a specific and defined configuration to the literary aspect of the university. Among the scholars who followed and kept the great literary tradition of the college of liberal arts at the University of Florence, Walter Binni, student of Momigliano, carried out an intense didactic activity that joined his remarkable technical preparation with his personal critical methodology. This was based essentially on analysis of the “poetica” of important authors—Leopardi, Ariosto, Alfieri, and Carducci—and on the significant periods of literary history in Italy: that dating from “preromanticismo” to “decadentismo.”

In 1967, a chair of Dantesque philology was created next to the one of Italian literature in occasion of the Dante celebrations that took place in 1965. Francesco Mazzoni was called to teach in this department.

The school of architecture was reopened during the difficult autumn of 1944. The German troops were moving behind the Gothic Line and half of Italy was still in the hands of the fascists. In the academic year of 1943–44, attendance was extremely reduced. The next year, the number of students in the school of architecture went

up 300 percent, a tremendous figure for that tragic period. During the terrible winter of 1944–45, the students of architecture would cut the fingertips from the gloves they wore so that they could use a pen to draw the furniture for the Giardino di Boboli in Florence. It was common for students to work six hours per day. Among these students, Franco Zeffirelli emerged. He conveyed his taste for the baroque in his scene designs for Luchino Visconti’s movies before becoming himself a celebrated film director.

The configuration of the university in 1924 brought a positive change in the field of mathematics. Before 1924, the college of science granted degrees only in chemistry and natural science. The presence of Giovanni Sansone in the *Istituto Matematico* contributed immensely to the development of the *Istituto*. He strongly believed that a library was a necessary tool to teaching, learning, and researching. Only one book was in the library of the *Istituto Matematico* when Sansone started teaching there in 1927. He worked so hard in collecting books that by 1962, the library owned 6,301 complete works and 275 mathematical periodicals.

—Antonella D. Olson

UNIVERSITY OF GLASGOW

(Glasgow, Scotland)

- Location:** The University of Glasgow is located in Glasgow's west end, where it has been since 1871. The university overlooks Kelvingrove park and museum, and is easily accessible by local bus routes and the underground train. Also in the Gilmorehill residential area are shops, restaurants, and cafes.
- Description:** The University of Glasgow is an independent, state-funded university with 13,500 full-time students, including 1,500 foreign students. There are also 2,600 part-time students at the coeducational university that was founded in 1451 for men only. There are 200 professors and 1,250 other faculty members.
- Information:** The University of Glasgow
University Avenue
Glasgow G12 8QQ
Scotland
(41) 339-8855
Fax (41) 330-4808
- Visiting:** The Visitor Centre is open from 9:30 A.M. to 5:00 P.M. from Monday through Saturday. From May to September it is also open on Sundays from 2:00 P.M. until 5:00 P.M. In the summer months there are also campus tours focusing on historical and architectural campus landmarks at 11:00 A.M. and 2:00 P.M. on Wednesdays, Fridays, and Saturdays. There are historical exhibits as well as interactive video displays at the Visitor Centre. For more information and tour prices, contact the Visitor Centre at (41) 330-5511.

The second oldest university in Scotland is the University of Glasgow. It is one of the largest and oldest universities in the United Kingdom. Glasgow is located in the Midland valley, a center in the fifteenth century of the political, cultural, and economic life of Scotland. The city became an archbishopric in 1492. King James II of Scotland petitioned Pope Nicholas V to found the university in 1451. The king worked with Bishop Turnbull to secure a papal bull from Nicholas. When Bishop Turnbull died in 1454 the university lost its major patron, but Turnbull's cathedral helped the university for many years. William Elphinstone, who became the rector of the University of Glasgow in 1474, kept the university in the public eye after Turnbull was gone.

Robert Henryson, a poet who was credited with bringing hundreds of words into the English language, taught law at the university in 1462. Some supporters hoped the university would specialize in legal studies, but they were outnumbered by those who believed Glasgow would be better served by a university that taught a wide range of subjects.

The church played a significant role in Scottish education until the mid-nineteenth century. Andrew Melville, a Presbyterian leader, created a charter for the university in 1575 that became the university's credo for 300 years. Since many colleges at that time trained boys who would be future ministers, Melville's work was pastoral as well as educational. Melville was at the university from 1574 until 1580, and in those years he transformed the curriculum and introduced teachers who specialized in particular subjects. The regenting system had been in place since the university's inception, meaning that students stayed with one regent or teacher for four years. That regent taught his students every subject. Melville had studied in France and Switzerland, and he was eager to bring up the level of Scotland's universities.

During the Reformation, ministers studied the "Book of Discipline," which established new rules for the education of Scotland's youth. Students were said to need a background in the arts, and then were to approach law, medicine, or divinity as a specialty. In the seventeenth century Scotland's universities were different from those in Cambridge and Oxford because they were open to students regardless of their rank in society. Parish and burgh schools in Glasgow provided students for the university, and they studied alongside their more privileged colleagues in Latin, which was the language of study until 1727.

In the early seventeenth century Oliver Cromwell installed Patrick Gillespie as principal of the University of Glasgow. These were exciting years at the university. Francis Hutcheson lectured in English literature and held the chair of moral philosophy from 1729 to 1746. Hutcheson showed the influence of Thomas Hobbes in his lectures.

Economist Adam Smith was educated at the university and later taught there. He arrived at the university in 1737 at the age of 14, and was appointed professor of logic in 1751. He also taught moral philosophy until 1763 and served as rector in 1787.

The medical school at the University of Glasgow has an international reputation. It opened a teaching hospital at the university in 1794. Two chemistry professors went from Glasgow to teach at the University of Edinburgh: William



University of Glasgow

Cullen and Joseph Black. Black studied at the University of Glasgow, and Cullen was one of his chemistry instructors. Black discovered "fixed air," or carbon dioxide. Joseph Lister did groundbreaking research in antisepsis at the university in the nineteenth century. Lister was the chair of surgery in 1860. Lord Kelvin was a professor of natural philosophy from 1846 to 1899 and he held the chair of the department. Other famous faculty members included James Watt, whose improvements on the original steam engine led to the engine's major impact on society.

The university was located on High Street in the center of the city until 1870 when it was moved to the west end of Glasgow. Finally in 1893 women were admitted to the university. In the 1990s, slightly more than half of the full-time students are women. Almost one-quarter of the students are 21 years old or older, and more than seven percent of the full-time students come from overseas.

The University of Glasgow's main building was designed by Sir George Gilbert Scott. A fine example of gothic architecture, the building has become one of Glasgow's landmarks. The university has one of the largest

university libraries in the United Kingdom, with almost 1.5 million volumes on 30 miles of shelves. It carries more than 8,000 periodical subscriptions and keeps close to 300,000 volumes of periodicals. The library also boasts close to 20,000 maps, more than 30,000 manuscripts, and almost 10,000 theses.

There are eight faculties at the university: arts, divinity, engineering, law and financial studies, medicine, science, social sciences, and veterinary medicine. The rector is elected by the students every three years on the basis of academic achievements as well as personal appeal. All of the faculties are based on the main campus, except for the veterinary school, which is located four miles away, in Garscube. The university offers more than 100 academic departments in these 8 faculties. The university also has six affiliated teaching hospitals.

Degree programs at the university include those leading in three or four years to a bachelor's degree. An additional one or two years in the same subject may lead to a master's degree. To receive a doctorate, students must devote approximately three more years. For acceptance to

the university, students must provide a general certificate of education (GCE) or its equivalent with five passes in different subjects. The subjects must include at least two at the advanced, or A, level, or four passes with at least three at the A level. Alternatively, international baccalaureate, European baccalaureate, and U.S. or Canadian high school diplomas are also accepted.

The university offers degree programs with several associated colleges. Students can study agricultural science, food production, and leisure in a program offered with the Scottish Agricultural College. In conjunction with the Glasgow School of Art, students may study architecture and fine art, or product design engineering. Teaching degrees are awarded to students completing study together with a program at St. Andrews College.

The university's career service department is open from 9 A.M. until 5 P.M. daily when the university is in session. It provides information on jobs and careers in Scotland and abroad. The department also tracks various business-related web sites that students can visit to gain information about any of hundreds of fields. Career areas are divided into categories of interest and into categories of study areas. They offer help for students putting together resumes and curricula vitae, and coaching for those about to begin interviewing. Students with disabilities are also welcomed at the university. Dyslexic students, for example, are given more time in which to complete exams.

The university's academic services unit consists of the library, media services, university archives, and computer services. The computing services maintains file servers as well as clusters of personal computers for student use. Color laser printing is available and video conferencing was introduced in the late 1990s. The staff offers software and hardware support as well as training courses and facilities.

The Hunterian Museum is on the campus of the university. Founded in 1807, it is the oldest public museum in Scotland. It was originally located on the university's campus on High Street, and moved with the rest of the university to Gilmorehill in western Glasgow in 1870. The Hunterian has permanent collections explaining the evolution of the earth, ancient Egypt, the Romans in Scotland, and Captain Cook's collections from the south seas. One of its most prized exhibits features an ancient clutch of dinosaur eggs. Another is a scientific experiment of Lord Kelvin's that began in 1887 and continues to this day. The museum displays the history of the university and tracks research done by faculty and students. It also offers many temporary exhibitions and a gift shop.

The Hunterian art gallery opened in 1980. It has an outdoor sculpture courtyard, a bookshop, and frequent exhibitions from its own private collection of prints. Paintings by Pissarro, Rembrandt, and Reynolds grace its halls. The gallery displays works from the estate of renowned architect Charles Rennie Mackintosh and from

the estate of painter James McNeill Whistler. There is also a reconstruction of Mackintosh's own house.

Some of the special programs at the University of Glasgow are the Beatson Institute for Cancer Research, the Confederation of Scottish Business Schools, the Engineering Research Design Centre, the Hetherington Language Centre, the Institute of Soviet and East European Studies, the John Logie Baird Centre for Research in Television and Film, the Scottish Science and Technology Forum, university audio-visual services, university marine biological station, Wellcome History of Medicine Unit, and West of Scotland Science Park.

Four organizations for students of the university are very active. There are two student unions: the Queen Margaret Union and the Glasgow University Union. The Students' Representative Council is the official liaison between officials of the university and the student body. The Glasgow University Athletic Club, or GUAC, comprises 45 different sports and their organizations.

There are also myriad other clubs and societies at the university. Some of these are the aikido club; alchemist society; archaeology and astronomy societies; ■ musical and operatic club called the Cecilian Society; canoeing, curling, and cycling clubs; gaming society; orienteering and parachute clubs; and other sports, music, and ethnic clubs. The Scottish Country Dance Club was established in 1955, and is affiliated with the Royal Scottish Country Dance Society.

There are about 4,000 available places of residence for students on campus. These are reserved for full-time students working toward degrees. Those students who live far from the university are also given priority in room assignments. Residence halls vary from the student village on Murano Street that was completed in 1994 to such large traditional halls as Queen Margaret Hall and Dalrymple Hall near Great Western Avenue. Some of the dormitories offer full catering, while others have kitchenette facilities for student use. The dormitories are also a center of university social life, and each has its own annual events and parties. There are also facilities for married students and those with families. The university maintains a list of properties on campus, near campus, or near an underground station, that are available for rent.

As a major employer in Glasgow, the university plays a large role in the city's economy. It employs 5,000 people and has an annual budget of more than £170 million. Glasgow is the largest city in Scotland, with a population of about 740,000, and the faculty and students of the university have an intimate relationship with the city. The university's credo promises ■ learning and working environment that is free of discrimination. Industrial and commercial clients rely on expertise from the university. Research projects are often coordinated by leading businesses in conjunction with particular faculties. This intertwined existence has helped Glasgow immensely, and the university also continues to benefit.

Further Reading: Most histories of Scotland discuss the University of Glasgow at length. Some of these include the multi-volume *The Edinburgh History of Scotland* edited by Gordon Donaldson (Vol. 2, Edinburgh: Oliver and Boyd, and New York: Harper and Row, 1974), (Vol. 3, New York: Praeger, 1965). Other histories describing the university include *Scotland's Story: A New Perspective* by Tom Steel (London: Collins, 1984); *A History of Scotland* by Rosalind Mitchison (London: Methuen, 1970); *Scotland from the Earliest Times to 1603*, 3rd ed. by W. Croft Dickinson (Oxford: Clarendon,

1977); and *The Story of Scotland* by Janet R. Glover (New York: Roy, 1958). The university has an interesting and informative web site at <http://www.gla.ac.uk>. A short illustrated history available at the visitor center called *The University of Glasgow: An Introduction*, provides visitors with a short illustrated history of the University of Glasgow.

—Fran Shonfeld Sherman

UNIVERSITY OF GRANADA

(Granada, Spain)

Location:	In the city of Granada, in southeastern Spain, near the Sierra Nevadas.
Description:	Government-funded university with 53,000 undergraduate and graduate students.
Information:	University de Granada Cuesta del Hospicio s/n (Hospital Real) 18701 Granada Spain (58) 243 063

The University of Granada's history has been inextricably linked with that of its city and of its region, Andalusia. The university was founded in 1526 to help integrate the culturally distinct former kingdom of Granada into the Castilian empire, an integration which proved difficult. In the late nineteenth century and early twentieth century, perhaps the most interesting part of the university's history, a new appreciation emerged of the culture of Andalusia. During that period, the arts flourished in Granada. The recentralization of power and repression of political dissent under General Francisco Franco, who ruled Spain from 1939 until his death in 1975, hindered the development of the university for much of the century. Since the early 1980s, the university has had increased autonomy in deciding its affairs and has grown significantly.

The University of Granada had its origins in Holy Roman Emperor Charles V's effort to integrate Granada, the last redoubt of Islam in Spain, into the kingdom of Castile. Because the kingdom of Granada remained the last Moorish stronghold in Spain for over 20 years, until it fell to Isabella and Ferdinand in January 1492, the city of Granada attracted many talented refugees in arts, letters, architecture, and engineering. The conquest of the kingdom of Granada signified the final defeat of the Moors in Spain and of Islam in western Europe.

Because of its illustrious past, Granada presented a challenge for the new Spanish rulers: how to incorporate a very advanced mercantile society with a religiously and culturally diverse population into the rest of their kingdom. Granada had been a center of learning in Moorish times, but building on this tradition proved difficult. While the current University of Granada is to some extent the continuation of the Arabic university of Yusuf I, founded in the fourteenth century, education in Granada before Spain's victory had been based on knowledge obtained from the

great Arab centers of learning and from Jewish scholarship. The fall of Granada to Spain cut Granada off from these scholarly sources. In 1492, Ferdinand and Isabella expelled from their kingdom all Jews who would not convert to Christianity. In 1502, many Moors were forcibly converted to Christianity and remained in Spain. Those who did not convert were expelled.

Because Granada, as the last stronghold of Islam, had great symbolic importance for its Spanish conquerors, they lavished considerable attention on improving the city, but the social atmosphere proved to be a deterrent to scholarly endeavors. The Arab residents of the city distrusted the non-Arab Christian rulers, doubting that eight centuries of animosity could end easily. The Christian residents of Granada, on the other hand, found it difficult to understand why the Spanish rulers were so magnanimous toward the conquered people of Granada.

The ruler responsible for founding the University of Granada, Holy Roman Emperor Charles V (who reigned as Charles I of Spain from 1519 to 1556), was particularly torn by, on the one hand, his admiration for the tremendous achievements of the Islamic rulers of Granada and, on the other, his duty to convert the population to Christianity. He particularly admired the Alhambra, the fourteenth-century Moorish citadel overlooking the city, choosing to spend his honeymoon there. Charles had further ambitions for Granada in his early days as king of Spain. He started construction of a palace in Granada and, at one point, he planned to make the city the permanent site of his court.

While Charles sought to win favor with the population of Granada, as a fervent Catholic he was obliged to convert the people to Catholicism. Easing the minds of the city's conquered population, which included various cultures, while promoting Catholicism, proved difficult. In 1526, the same year that he started the process for creating the university, Charles V decreed that all Muslim ceremonies, usages, and customs were to be banned in Granada. Although Charles resisted the pleas of the Moorish nobles to rescind the edict, bribes to the chief imperial advisor and tributes to the emperor kept the edict from being enforced for the next 40 years.

The founding of the University of Granada grew out of Emperor Charles' 1526 visit to the city. He founded the new university as a way of maintaining the former kingdom's cultural richness. In November 1526, the emperor called a meeting of bishops and men of letters to make known his intention of creating a college of logic, philosophy, theology, and canon law. On June 14, 1531, in a papal bull, Pope Clement VII authorized the



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founding of a "general school"; the bull described which degrees were to be conferred and granted. The bull also explained the procedures for conferring and granting degrees at Bologna, Paris, Salamanca, and other leading universities. The pope authorized a house of general studies, with a college of logic, philosophy, and canon law; a school for 100 boys; the Colegio Catalino; and the Colegio San Miguel. Although the university was to be

open to students of all towns, religious backgrounds, and cultures, in the beginning the university was concerned solely with moral education and, in particular, religion. Not until 1549 did the rector propose adding chairs in a non-religious field, medicine, an area which later became a strength of the university.

Charles V did not continue to play a strong role in the development of Granada or the university. His ambition to

create ■ universal empire involved him in continuous wars and prevented him from finishing his imperial palace in Granada. As Spain expanded in the New World, Spain's rulers shifted their attention to Seville, a major port for embarkation to America. Granada fell into neglect.

Despite Spanish efforts at integrating Granada and its surrounding region, Andalusia, the area maintained ■ separate culture and has been a site of unrest since the fifteenth century. Between the late nineteenth century and the end of the Spanish Civil War in 1938, there was almost constant turmoil. A regional identity developed by the mid-nineteenth century which worked against the success of federalism in Spain in the 1870s. The idea of federalism in Spain had been based on the equality of different areas; however, the different regions in Spain had not developed equally. Castile had long dominated other provinces, including Andalusia. Although the first attempt at federalism in Spain failed with the end of the First Republic in Spain in 1874, the idea of ■ Spain in which the regions had some autonomy remained important, particularly in Andalusia, for decades afterward. Although the University of Granada was noted for its programs in letters and medicine around the turn of the twentieth century, two of the most influential graduates of the university, Blas Infante and Federico García Lorca, studied law there during this period.

The importance of Granada before 1492 had a strong effect on these two students. Although both came from Andalusia, like most of their fellow students in Granada, they first became conscious of the richness of Andalusia's heritage at the university. Inspired largely by his education at the university, Infante became ■ leading Andalusian writer and nationalist after receiving his law degree in 1906. His contact as a student with outstanding Andalusian specialists formed in him a desire to recover the culture, history, and identity of the region. Like other Andalusians at the time, Infante believed that Andalusian history and culture had been suppressed by the impact of assimilation into Castile, an area for which Andalusian history was merely an appendage.

Another famous writer who studied at the University of Granada was Federico García Lorca, the most popular poet of the group called the "Generation of '27." He studied law at the University of Granada before transferring his studies in 1919 to the University of Madrid, in the city at the center of the Spanish arts world. Lorca studied law because his father wanted him to have ■ professional career, and the other faculties—medicine, science, and pharmacy—were unthinkable, given his interests. Even though he went to Madrid ostensibly to continue his studies, there is no evidence that he ever set foot in the university there. Under pressure from his family, Lorca did eventually complete his studies at Granada, in large part due to the leniency of the examining faculty, who even allowed him to take an examination after the deadline had passed.

Lorca's studies in Granada were to have a powerful effect on his life. He was strongly influenced by Don Martin Dominguez Berrueta, professor of the theory of literature and arts. Don Martin believed that Spanish universities needed to be reformed to meet the needs of contemporary Spanish society. He was particularly noted for developing close ties with his students and taking them on educational field trips, both actions almost unheard of in Spain at that time. During field trips conducted by Don Martin, Lorca first came into contact with the art of cities beyond Granada. Lorca's first book, *Impressions and Landscapes*, developed out of these trips with his art history class. Another professor, Don Ramon Guixé y Mexia, served as the model for the pedantic professor in Lorca's play *Dona Rosita*.

Lorca, like Blas Infante, was greatly influenced by the blossoming cultural atmosphere of Granada. The growing awareness of the distinctness of Andalusian culture and the presence of Moorish architectural treasures drew artists to Andalusia in the early twentieth century, Angel Gavinet, a poet associated with the "Generation of '98," was a native of Granada whose first book was *Granada the Beautiful*. Many other local writers from the "Generation of '98" were still living in Granada in the 1920s; many served as inspirations to younger writers and artists. Resident artists such as the composer Manuel de Falla attracted other poets, musicians, and intellectuals to Granada, giving it a cultural richness it had not had since Moorish times. The cultural life was so rich in the 1920s that Lorca founded a literary magazine which he described as "of Granadans and only Granadans." The first issue contained a drawing by Salvador Dali.

The history of Granada also played a key role in Lorca's intellectual development during his time at the university. Lorca, who was more interested in arts and literature than law, often spent time in the Alhambra and the Generalife or with the gypsies of the Sacromonte and Albaicin rather than in class. In fact, Lorca was so impressed by the Arab past of Granada that he at one time even suggested building a library for Granadan Arabic artifacts.

A few of the professors who most greatly influenced Lorca later played a major role in the liberal Second Republic, which lasted from 1931 until 1939. One of the professors closest to him was Fernando de los Rios Urruti, a professor of political and comparative law. Fernando de los Rios Urruti served as minister of justice and then minister of education during the Second Republic. Before that he had founded the Granada branch of the Socialist party, been a member of parliament for Granada, and served as president of the center of arts and literature. Professor Don Augustin Vinales, who had urged other faculty members to examine Lorca leniently—he could only practice his true calling of poetry after he had pleased his family by obtaining his degree—served as minister of finance under the Second Republic.

The left-wing political opinions of some people connected to the university made their lives difficult during the Spanish Civil War, which began in 1936. When the right-wing nationalists took control of Andalusia in 1936, they executed many of their opponents. The best estimates available place the number of executions in Granada and its immediate vicinity at approximately 4,000, with August 1936 the bloodiest month. The most famous of those executed was Lorca, who had returned to Granada for a visit. Before he was shot, Lorca was kept for two or three days in the university's current law department building, then the governor's office and residence. Others connected with the university who were executed include the rector of the university, Salvador Villa; a professor of pediatrics, Rafael Garcia Duarte; a professor of political law, Joaquin Garcia Labella; a professor of pharmacy, Jesus Yoldi; and a professor of history, Jose Pananco Romero. Many of those artists and scholars who remained physically unharmed were deeply affected by the assassination of friends and acquaintances.

The political developments of the twentieth century had a strong influence not only on the faculty of the University of Granada, but also on what students in Andalusia chose to study. In the first years of the century, equal numbers of students studied humanities and science. During the dictatorship of Primo de Rivera, from 1925 to 1930, the number of students studying science increased to 68 percent. During the Second Republic, 45 percent of students in Andalusia studied the humanities. After the Spanish Civil War, the percentage of students studying humanities declined gradually to 30 percent from 1951 until the 1970s.

The growth of higher education in Andalusia was fairly slow during this century, until at least the 1980s. Traditionally, university education in Andalusia has been reserved for the few. In 1910, 0.02 percent of the population in Andalusia had a university degree. By 1973 the percentage of Andalusians with such an education had climbed to a meager 0.34 percent.

Since 1983, the University of Granada has experienced

the most rapid growth in its history, a growth strongly influenced by the law on university reform of 1983. Before the law passed, the Ministry of Education in Madrid controlled the entire national university system. The law on university reform granted autonomy to each state university, as long as it followed the guidelines and met the qualifications common to all state universities.

The University of Granada has continued to play a major role in the intellectual and cultural life not only of southern Spain, but also of nearby Africa, where it has branches in the Spanish cities of Ceuta and Melilla in Morocco. Currently, the University of Granada is the only European university with centers in Africa. It has traditionally maintained a strong relationship with the countries of the Maghreb, especially with Morocco.

The University of Granada consists of faculties, technical schools, and university schools. The length of time required for each program varies. The programs offered through the university schools require three years. In addition, there are three-year degree programs to receive the degree of diplomatura in fields including optics, optometry, chemical engineering, statistics, management, and labor relations. Five-year degree programs are offered for the degree of licenciado in law, science, philosophy, and letters, as well as a five-year program in engineering. The university offers a six-year medical program. Doctorates in law, science, medicine, pharmacy, and letters require a further two years of study and a thesis.

Further Reading: Although information about the university is in Spanish, two English-language books about its most famous graduate shed some light on the university: Ian Gibson's *Frederico García Lorca: A Life* (New York: Marion Boyars, 1989) and Francisco García Lorca's *In the Green Morning: Memories of Federico* (New York: New Directions, 1986).

—Christine Margerum

UNIVERSITY OF ILLINOIS (Urbana-Champaign, Illinois, U.S.A.)

Location:	In the adjoining cities of Urbana and Champaign (combined population 100,000), approximately 120 miles south of Chicago, in east-central Illinois.
Description:	The University of Illinois at Urbana-Champaign (UIUC) is a comprehensive, major public university enrolling approximately 26,000 undergraduate students. As a land grant institution, it offers undergraduate and graduate education, conducts research, and provides public service.
Information:	Office of Admissions 10 Henry Administration Building 506 South Wright Street Urbana, IL 61801 U.S.A. (217) 333-3200
Visiting:	Student-conducted tours of the campus are available when classes are in session and weather permits. Reservations are recommended and may be made by calling the Campus Visitors Center, (217) 333-0824.

The University of Illinois is one of the original 37 public land grant institutions created by the Morrill Act in 1862. This grant allowed for the provision of 30,000 acres of land for each congressman to be used for educational purposes. Illinois received 480,000 acres of land in Nebraska and Minnesota as its share, the sale of which was to provide an endowment for an industrial educational institution of higher learning. Illinois had lagged behind other states of the Northwest Territory in establishing a state university even though the Northwest Ordinance of 1787 had encouraged the founding of schools and the promotion of education. Early settlers in Illinois opposed the founding of a university and diverted available funds to other state operations.

Eventually the proselytizing efforts of Jonathan Baldwin Turner, an educator from Yale, who migrated west to teach Greek at Jacksonville College in 1833, helped rally support for higher education for the working classes in Illinois. Turner fought against prevalent and persistent assumptions that institutions of higher education offering courses other than in the professions of law or medicine were "Utopian schools" peopled by effete professors. He enlisted support from both Abraham Lincoln and Stephen

A. Douglas, political rivals, for a land grant to provide the endowment for a university for farmers and mechanics. Passage of the legislation necessitated site selection for the state university. Leading contenders included the downstate towns of Jacksonville, Bloomington, Lincoln, and Champaign-Urbana. Each institution touted its attractive features and the material gifts that it could provide to the new university.

Champaign was well-positioned when the legislature met in 1867. Due in part to the efforts of Clark R. Griggs and John Bricker, who represented Champaign County, a large percentage of legislators became convinced that Champaign was a fitting and proper site for the new state university. Champaign County, the lowest bidder yet the site "winner," was accused of employing a slush fund to "buy up correspondents of the press, editors and legislators" and overvaluing its bid. Presumably, the "buying up" included the liquid refreshments and sumptuous quail and oyster dinners proffered by Griggs and his cronies to the legislators of both parties.

Whatever factors persuaded the legislature, the new institution, chartered by the state of Illinois as the Illinois Industrial University, welcomed its first class of students on March 2, 1868. The board of trustees, established by state law, included the governor, state superintendent of public instruction, president of the state board of agriculture, and 28 other citizens. This number precluded doing business efficiently and was reduced in 1873 to 11 and later to 9 (1973). John Milton Gregory, a Baptist minister and former state superintendent of public instruction in Michigan, was chosen the first regent by the board. Gregory faced the challenges of establishing a curriculum, employing faculty, and developing a broad-based university while not antagonizing those individuals who desired to see the university consigned to imparting strictly practical knowledge.

When the university opened its doors to 50 students in March 1868, it had a faculty of two and the regent to teach 17 courses in the fields of agriculture, polytechnics, military science, chemistry, natural science, trade and commerce, general science, and literature. To encourage enrollment, only a grammar school education was required for entrance. Later, one year of preparatory education was a requisite for admission. All university classes were held in a single five-story building, a former female seminary surrounded by muddy fields. Students slept and studied in this same building, sometimes coming downstairs to recite in their bathrobes and slippers.

In the early years, the school fared poorly. Buildings and equipment were in need of repair; rainy weather and



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foraging cattle destroyed any emerging crops. In addition, no great demand for graduates of an agricultural college existed; the fields of business or engineering provided more remunerative employment.

Gregory labored to bring academic culture to rural central Illinois, confronting a few trustees and agriculturists who objected to the offering of academic courses in addition to the strictly practical. The student population continued to grow and included 24 women allowed admission by the board of trustees in 1870. At this time, the legislature approved the construction of a new building, University Hall, which stood on the present site of the Illini Union.

The late 1870s were a time of self-examination for the university. It granted no degrees until 1877. Earlier, only diplomas or certificates listing courses taken were awarded. The Illinois Industrial University lacked a song, official colors, and its motto, "Learning and Labor," was in English not Latin. Delta Tau Delta, the first fraternity at the university, was organized in 1871–72 but not officially recognized. Gregory pronounced fraternities silly, anachronistic, disruptive, and dissipating. Clashes with trustees and students led to Gregory's resignation in 1880.

Financial hardships beleaguered the university in the 1880s when Selim H. Peabody, professor of mechanical engineering and physics, was appointed the university's second regent. Some relief came from federal appropriations in the form of the Hatch Act of 1887, which provided \$15,000 annually for the establishment of agricultural experiment stations, and the Morrill Supplementary Act, which provided incremental financing to land grant institutions.

Largely through the efforts of the faculty and alumni, the university slowly gained in stature. Peabody estimated that in 1889, the indefatigable faculty had attended over 100 educational, agricultural, or other gatherings and delivered over 200 addresses. At this time, the alumni, especially the Chicago chapter, effected two important changes. The name Illinois Industrial University was incongruous with the broad-based mission of the university. Since the mid-1870s, "Industrial" had connoted reform schools or manual labor schools for indigent or unruly students. Both alumni and students petitioned for a name change, and on June 19, 1885, the legislature officially approved the name University of Illinois. Second, alumni were instrumental in securing the popular election of trustees, approved in 1887. It was believed that this method would ensure that the board would have more alumni members who would have the best interests of the university at heart.

Criticized for strict policies including his continued opposition to fraternities and his struggle to maintain academic standards, Peabody was forced out by the board of trustees in 1891. The board then sought a strong administrator who would control student rowdiness and move the

university forward. Previously, students had caused disturbances in chapel by loosing vials of tear gas and by staging a military rebellion over the dismissal of a cadet captain for poor grades.

Trustees offered the regency to the Reverend Washington Gladden, a prominent Congregationalist minister to Woodrow Wilson. During the search for a new leader, Thomas J. Burrill, dean of the College of Agriculture, who served as acting regent, greatly advanced the reputation of the university by acquiring unprecedented funding from the state legislature, opening the graduate school, starting the summer session, and developing extension teaching.

The next administrator, Andrew S. Draper, insisted that the title of his office be changed from regent to president. He continued building programs begun in 1892 and added the schools of law, library science, and medicine during his ten-year administration.

Draper enjoyed the support of Governor Peter Altgeld (1893–97), who increased legislative funding for the university during his tenure. Altgeld took a personal interest in the university, regularly attending board meetings and pronouncing his opposition to endowed universities as aristocratic, believing that the University of Illinois was a worthy representation of the citizens of Illinois.

At this time, the diversions of students reflected new interests. Intercollegiate activities grew to eclipse formerly popular literary societies by 1886. Fraternities were officially approved by the trustees in 1891. Sigma Chi was the first to receive sanction. The first sorority, Alpha Chi Omega, grew from the Alethanai Literary Society. Fraternities and sororities filled the social void in Champaign-Urbana and provided greatly needed room and board.

The colleges of agriculture and engineering both flourished. Under the capable direction of Dean Eugene Davenport, the agriculture college was reorganized. Appropriations increased, and the support of farmers was enlisted. A new agriculture building contributed to an increase in enrollment and the number of courses offered. After the turn of the century, the agriculture experiment station, established in 1876, had become the agricultural center of the state. Engineering, too, was well established when Draper arrived. Over 300 students were enrolled in 1894. A large appropriation provided the beginnings for an engineering experiment station. Both agriculture and engineering experiment stations focused national attention on university research.

The University of Illinois continued to prosper under President Edmund J. James, a native Illinoisan who served from 1904 to 1920 and who used public relations and legislative skills to secure significant state appropriations. James strengthened educational standards, emphasizing research and stressing the importance of a liberal education. He hired outstanding faculty often in competition with other institutions. President Charles Eliot of

Harvard University visited the campus in Champaign in 1908 to discover for himself why he was losing so many professors to Illinois. Sometime later, after James spoke to a gathering at Harvard, Eliot said to the group, "Men of Harvard, there is your competition of the future." Under James, course offerings were expanded, in 1905, the state geological survey was brought to campus, and in the following year, the College of Education was founded. Sixteen major buildings were completed before 1918, including the auditorium, the armory, and the first women's residence hall. Enrollment quadrupled, with many international students coming to the university.

Unlike the Spanish-American War, World War I involved the university extensively. The military department was reorganized and moved to the armory in 1914. In response to the establishment of the Reserve Officers Training Corps (ROTC) by Congress, a unit was established on campus in 1916. The University of Illinois was one of six schools chosen for military pilot training. Provision for student enlistment was made when the United States entered the war, and by the end of the term, 1,262 students had withdrawn from the campus.

James, suffering from poor health, resigned, and David Kinley, a long-time university administrator, was selected president in 1920. Facing the effects of wartime disorganization, financial difficulties, and increasing enrollment, Kinley nonetheless persevered in a building program. Smith Memorial Hall, the first university building constructed from funds that were not state-appropriated, was finished in 1921; Mumford Hall was built in 1924 and the new library was completed in 1926.

President Harry W. Chase, a progressive who followed Kinley, served for only three years. However, during his tenure he liberalized university statutes and student regulations.

The Depression touched the campus in 1932. Delinquent taxes in Chicago resulted in inadequate funds in the state treasury. Chase resigned and was succeeded by Arthur H. Daniels, acting president for one year. Although Daniels endeavored to improve the financial situation, the university considered borrowing federal funds for needed improvements.

Construction of new buildings slowed during President Arthur C. Willard's term (1934–46). However, University Hall was demolished, and the Illini Union was built. The Depression touched the campus in other ways. More students sought part-time work. Even the chimes in Altgeld Hall were silenced; the university could not afford to pay the chimes player.

In the post-World War II era, the University of Illinois, with other regional universities, benefited from state support of higher education. At this time, George D. Stoddard was named president, assuming leadership in the summer of 1946. He carried his reputation as an outspoken and liberal state commissioner of education in New York when he came to Illinois. His appointment

of young deans who occasionally clashed with veteran faculty and conservative elements in the community hastened his dismissal by the board of trustees, an event which occurred in 1953.

Unprecedented growth characterized the university's tenth decade when David D. Henry was selected as president. During his tenure, the graduate school grew rapidly, and federal support for scientific and technological research increased. The university was reorganized into the Champaign-Urbana campus, and the Chicago Circle and Medical Center campuses. The Chicago campuses merged in 1982 to form the University of Illinois at Chicago.

University Archivist Maynard Brichford notes that the recent rapid growth in telecommunications, campus networks, and supercomputer applications has been stimulated by federal grants, the generosity of manufacturers, and the rapid development of electronic technology.

Throughout its 128-year history, the University of Illinois has attracted outstanding faculty who have made significant contributions in teaching and research. More than 70 faculty members are members of the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Engineering. The National Medal of Science was awarded to eight scientists while they were on the faculty. Congress established the Presidential Young Investigators Award to support research by faculty members embarking on academic careers. Twenty-six University of Illinois faculty have received this award.

The university boasts seven Nobel Prize winners, including two who were honored for work undertaken at Illinois. John Bardeen, who served on the faculty from 1951–91, was twice awarded the Nobel Prize in physics—in 1952 and 1972—the only individual to achieve this honor.

Throughout the decades, research has comprised a major thrust of the campus mission. From the Nuclear Physics Laboratory which began operations in 1940 to the National Soybean Research Laboratory established in 1992, more than 30 centers, institutes, and programs contribute to the development and dissemination of knowledge.

The first student in the United States to graduate in architecture, Nathan Ricker, did so from Illinois. Ricker, a renowned educator, designed several university buildings. Altgeld Hall, the only Romanesque building on campus, was designed by Ricker and James M. White and completed in 1897 with subsequent additions. Originally, it housed the university library; today it houses the mathematics department and its library.

"Alma Mater," standing in front of Altgeld Hall, is the university's most familiar symbol. Designed by sculptor and alumnus Loreda Taft and unveiled on June 12, 1929, it stood until 1962 behind Foellinger Auditorium. Romantically inclined students kept its throne "shiny and

well-used." "Alma Mater" is flanked by "Labor and Learning," representations of the university's motto.

Clarence Blackall designed Foellinger Auditorium, the site of classes, lectures, concerts, and other special events. Built in 1907, its copper roof and cornice is reminiscent of Thomas Jefferson's rotunda on the University of Virginia campus. In 1984 the auditorium was completely renovated with funds provided by alumna Helene Foellinger.

Another domed building on campus, revolutionary in conception, is the Assembly Hall (1963) designed by Max Abramovitz, who served on the design team for Lincoln Center in New York City. The Assembly Hall is one of the two largest edge-supported domes in existence, spanning 400 feet in diameter and rising 128 feet above the floor. Musicals, concerts, commencement, and "Fighting Illini" basketball games are held in the Assembly Hall.

The largest academic building on campus, the Beckman Institute for Advanced Science and Technology, is a major research center wherein diverse research communities work together to explore relationships between areas of traditionally discrete scientific research. The Beckman Institute was constructed in 1989 on the site of the university's first building. A \$40 million gift from alumnus Arnold O. Beckman and his wife Mabel M. Beckman supplemented by \$10 million from the state of Illinois funded Beckman Institute, the recipient of the 1990 Laboratory of the Year Award by *R & D Magazine*.

From an initial collection of 644 books and government pamphlets purchased with \$1,000 of state appropriations, the university library's collections include more than 8 million volumes, ranking it as the third largest academic collection in the nation after Harvard and Yale. The main library was designed by Charles Platt and completed in 1926 with several subsequent additions. The 27 tinted glass windows designed by J. Scott Williams of New York depicting Renaissance printers' marks decorate the main reference room. Quality and diversity characterize library collections. The Rare Books and Special Collections Library owns a complete first edition of Audubon's *The Birds of America* and comprehensive collections of works by and about Shakespeare, Milton, Abraham Lincoln, and Mark Twain. The Grainger Engineering Library Information Center, opened in 1994, is the largest engineering library in the country, housing more than 225,000 vol-

umes and 3,400 serials. Additionally, the library system includes the undergraduate library and more than 38 departmental libraries. The undergraduate library was built underground so as not to obstruct sunlight falling on the Morrow Plots.

The Morrow Plots and the Astronomical Observatory are designated National Historic Landmarks. The Plots, designated in 1968, are the country's oldest agricultural experiment fields in current use. The Astronomical Observatory received its status in 1990 primarily for research in astronomy conducted within the building.

Graduates of the University of Illinois have made significant contributions in business, education, research, and public service. Some notable alumni include Mary L. Page, 1878, perhaps the first woman graduate in architecture in the nation; Wallace Carothers, inventor of nylon and named by *Life Magazine* as one of the 100 most important Americans of the twentieth century; Charles Bowsher, head of the General Accounting Office and Comptroller General of the United States; James Brady, press secretary to President Ronald Reagan; Avery Brundage, president of the International Olympic Committee for several years; and Jack Kilby, inventor of the integrated circuit. Six college of communication graduates have won the Pulitzer Prize, including film critic Roger Ebert.

The University of Illinois, although a world-class institution, drawing international students and students from every state, still fulfills its original mission to educate the citizens of Illinois. Fully 93 percent of its undergraduates call Illinois their home state and contribute to the University of Illinois's status as the public flagship institution in the state.

Further Reading: Winton U. Solberg's *The University of Illinois, 1867-1894: An Intellectual and Cultural History* (Urbana: University of Illinois Press, 1968) offers a thorough and approachable history of the university's early years. Another treatment of the founding years is the detailed and scholarly *Illinois* by Allan Nevins (New York: Oxford University Press, 1917). An intimate and detailed view of campus life as seen through the pages of the *Daily Illini* is provided by Roger Ebert in *An Illini Century: One Hundred Years of Campus Life*. (Urbana: University of Illinois Press, 1967).

—Kathleen M. Conley

UNIVERSITY OF IOWA

(Iowa City, Iowa, U.S.A)

Location:	In Iowa City, a town of 60,000 located 220 miles southwest of Chicago, Illinois, and 250 miles northwest of St. Louis, Missouri.
Description:	A state university enrolling approximately 27,000 students in undergraduate, graduate, and professional schools.
information:	Campus Information Center Iowa Memorial Union Iowa City, IA 53342 U.S.A (319) 335-3847; (800) 553-4692 (319) 335-3055
Visiting:	The Old Capitol, the school's first building, is open every day except legal holidays and December 31. For group tours, call (319) 335-0548.

In the mid-1800s, pioneers settled the fertile fields west of the Mississippi River. They were Irish, German, and Yankees, who respectively, sought refuge from cataclysmic crop failures, intolerant government, and economic troubles. They practiced separate religions and knew unique histories, but they shared a belief in education. The German immigrants had left behind the best state-run schools in western Europe, and many of the Yankees had come from Massachusetts, home of the oldest public school system in the nation.

They had moved into the Iowa Territory near the end of a 25-year period that saw the idea of tax-supported education take hold in the United States. The founding fathers, particularly Thomas Jefferson, believed that education was crucial to a successful democracy. However, an organized, three-tiered educational system had been slow in coming. Ill-trained teachers held disorganized classes in cramped schools. Most colleges were small liberal arts schools run by religious groups, with the focus more on decorum than philosophy. Several such schools were scattered throughout Iowa.

Progress came steadily. Starting in 1804 with Ohio, the federal government offered new states free land for state universities. The Northwest Ordinance, which established guidelines for westward expansion, lured people from the 13 original colonies by stating that "means of education shall forever be encouraged." In 1847, only 59 days after Iowa became a state (and 52 years after North Carolina

opened the country's first state-run university), the Iowa legislature decided to build a state university in Iowa City, the state capital.

Iowa politicians soon discovered that deciding to build a school was easier than agreeing how to run it. Iowa's religious colleges offered curricula centered on Greek and Latin. In contrast, the legislature wanted the new school to provide Iowa with badly needed schoolteachers and professionals to help the economy. The governor, James Grimes, declared that it would be a mistake to create a liberal arts institution that would compete with the private colleges. What he believed was needed, according to the Stow Persons in *The University of Iowa in the Twentieth Century*, "was a practical scientific and polytechnical school to educate farmers, mechanics, engineers, chemists, architects, metallurgists, and geologists."

Even before the university opened, the legislature wrangled over proposals to establish five branches throughout the state. The governor resisted these attempts, and the 1857 constitution stipulated that the university was to remain at Iowa City, and "without branches."

The university opened in September 1855 with four faculty members and 124 students, including 41 women, enrolled in one of three departments. In addition to the collegiate department, which was the university proper, the school offered a normal department for prospective teachers, and the preparatory department for students found inadequately prepared for college work. Only the collegiate department had the power to confer degrees. Grimes had lost his battle for a practical curriculum, and, what Persons describes as "eastern clerical and educational interests" controlled the university curriculum, imposing a traditional liberal arts curriculum on the university.

Due to low enrollment, the collegiate and preparatory departments were closed from 1857 to 1860. New trustees also voted to exclude women from the collegiate department. However, this restriction provoked such opposition that it was not enforced, and it was repealed the following year. Since, in practice, women were never excluded, Iowa claims that it was the first public university in the United States to admit men and women "on an equal basis." From the first, the university was also open to minorities. (Alexander Clarke, an activist on behalf of civil rights for blacks, began his legal studies at the University of Iowa just after the Civil War at the age of 57.) However, because of Iowa's overwhelmingly white population, there were few nonwhite students (student housing was segregated until the 1930s).

Because of the elitist tradition of existing colleges, many legislators feared that university graduates would



University of Iowa

be contemptuous of manual labor. In 1858, they founded a State Agricultural College and Model Farm at Ames (today known as Iowa State University). In 1876, Iowa State Teachers College (now the University of Northern Iowa) opened in Cedar Falls. As the state legislators had feared, the university at Iowa City initially copied the more prestigious institutions in the east from which it drew its faculty. Until the 1890s, it functioned primarily as a liberal arts college offering a classical curriculum in a Christian environment. The first five presidents were Protestant clergymen, and students had to attend daily chapel and Sunday church services. The rules forbade drinking, card playing, gambling, profanity, entering a saloon, and attending the theater. Tobacco was not allowed in the classrooms or study halls.

Within the collegiate department, students followed a set program in Greek, Latin, mathematics, and science. Acting under pressure from the state legislature, the university added five professional departments: law (1865), medicine (1870), dentistry (1882), pharmacy (1886), and homeopathic medicine (1887). However, these departments offered only undergraduate courses, and admis-

sions and graduation standards were much less rigorous than those of the collegiate department.

Under the leadership of George MacLean, president from 1899 to 1911, Iowa turned to the Germanic model of a university. The pioneering American institution in this area was Johns Hopkins University, founded in 1876 as the first American university on the German model—with lectures to large groups, seminars for intensive research, and laboratories for experimentation. Inspired by Hopkins, established American schools also created graduate faculties and granted the M.A. and Ph.D. as earned (rather than honorary) degrees. MacLean was personally experienced in and an enthusiastic supporter of the German model, having earned a Ph.D. at the University of Leipzig in 1883.

Despite student indifference and faculty hostility, brought about by fears that MacLean's changes would adversely affect their professional lives, MacLean moved vigorously to turn Iowa into a research university. The six existing undergraduate departments became colleges. More rigorous standards were introduced into the five professional colleges, and their change into graduate programs began. The former collegiate department became

the College of Liberal Arts, and postgraduate courses were assigned to a separate graduate college with its own dean. New subject-matter departments were created within these colleges; departments with related interests became schools.

The new departments were staffed by professors qualified to conduct research. When MacLean took office, only 26 percent of the professorial staff had doctoral degrees. When he left in 1911, more than half had an earned Ph.D. By 1911, 231 students were enrolled in the graduate college. Only 12 American universities had a higher percentage of students in graduate programs. Wisconsin was Iowa's only equal among public universities.

Neither the public nor the legislature was ready to accept MacLean's concept of a scholarly institution of graduate and professional schools. He was forced to resign in 1911, following changes in the makeup of the university's governing board. From 1870 to 1909, each of the three state schools was governed by its own board of regents, which hired and fired faculty, managed financial operations, and monitored students' lives. Under this system, the schools directly competed for funds and facilities. Impatient with the schools' rivalries and legislative lobbying, the legislature in 1909 placed the three schools under one board of education (called the board of regents since 1955). The members of the new board wanted to make their own hiring choices and forced MacLean and the other two presidents to resign.

The post-MacLean era was shaped by an effective working partnership between President George Jessup (1916–34) and Carl Seashore, dean of the graduate college from 1908 to 1936. Jessup was determined to make Iowa one of the top universities in the country. He was a superb politician and manager but not an intellectual. His manner was brisk and incisive, fostering the impression that he was in firm control. Arthur M. Schlesinger Sr., history department chair from 1919, once described Jessup as "a stock, square-jawed man who looked and acted more like a business executive or banker than a university president." Jessup remembered every political and civic leader who might be useful to the university and maintained close ties with them. He spoke to any group that would hear him, and he was careful to say nothing that would challenge or disturb his audiences.

Thanks largely to Jessup's personality, the relationship between the school's president and board finally stabilized. The board devoted itself to policy and left administrative matters to Jessup. Instead of delegating, Jessup kept much of the power to himself. Like the university's founders, he scorned elitism. He believed that a university should serve public needs and that extension programs, educational radio, correspondence courses, hospitals, and health clinics should bring the university's resources to communities throughout the state. At the same time, in his determination to improve the faculty, he offered high salaries to recruit the best professors.

Among the school's leaders during the Jessup years was Carl Seashore, the graduate school's dean. A native Iowan, Seashore earned a Ph.D. in psychology from Yale University. Firmly committed to the newer methods of experimental psychology, he visited pioneering laboratories in Berlin, Leipzig, and Göttingen before joining the Iowa faculty in 1897. As dean from 1908 to 1936, Seashore controlled admissions and approved proposed thesis and dissertation subjects. Central to Seashore's educational philosophy was his belief in the importance of recognizing and cultivating individual differences. In 1909, he said, "Keep each individual busy at his highest normal level of successful achievement that he may be happy, useful, and good." To move toward this goal, he provided institutional support for programs that integrated teaching, research, and practical service. Convinced that the methods of applied psychology could be useful in many fields, he encouraged isolated departments to work together.

Some of the most lasting innovations at the University of Iowa occurred in educational testing, child welfare, and speech pathology. During World War I, Seashore helped develop the Army's Alpha intelligence tests. In 1923, at his suggestion, President Jessup ordered that incoming freshmen take the Alpha test. Out of Seashore's proposal that high schools institute similar tests emerged the Iowa Testing Program. Everett Linquist, who directed the testing program from 1930 to 1969, developed the Iowa Test of Basic Skills, taken by millions of school children throughout the country. In the 1950s, Linquist invented an electronic machine to score and store objective test results. Because he feared that the consequent ease of objective testing would lead schools to emphasize isolated facts, Linquist developed test questions requiring comparison, inference, and judgment. In 1959, he became cofounder of the influential American College Testing Program.

The Iowa Child Welfare Research Station was also important. Established in 1917, the research station was the first American center to study the development of a normal child. As a result in his interest in physiology and psychology of normal speech, Seashore was directly responsible for the founding in 1925 of a pioneering clinic for the study of speech defects (now the Department of Speech Pathology and Audiology). Seashore personally supervised the education of Lee Travis, the clinic's first director. Later, James F. Curtis and Wendell Johns attracted scores of patients to Iowa City for work on cleft palates and stuttering. As part of their therapy, stutterers walked around the city startling passersby by asking questions such as "Does my stuttering bother you?"

Another innovation was the School of Religion, established in 1925. The first such school at a state university, it grew out of an effort to bridge the separation between church and state. Protestant, Roman Catholic, and Jewish

leaders each chose and funded a professor, whose courses carried full academic credit toward graduation. Administrative costs, initially supported by the Rockefeller Foundation, were taken over by the university in 1938. Since 1970, the university has chosen the faculty, but churches and synagogues continue to provide financial support.

The university also broke new ground in the arts. Iowa was the first American college or university to accept artistic work in lieu of research theses. Though it has been widely imitated since, this procedure was revolutionary in the 1920s. Many schools offered courses in music, drawing, and painting, but they did not lead to advanced—or even undergraduate—degrees. The physical and biological sciences started the practice of requiring a research thesis for advanced degrees; the practice later spread to the social sciences and humanities. In any field, a dissertation was expected to follow a rigid scientific methodology: identify facts; classify data; and analyze expression or behavior.

The change began with George Stewart, a physicist, who acted as a graduate dean in Seashore's absences. Stewart believed that research was a creative act. Experiments started with a hunch, and conclusions were guided by insight and inspiration. As a result, Stewart thought the arts deserved the same academic respect as the sciences. The agreement of Seashore and other physical scientists lent credibility to this innovative philosophy.

In 1922, the graduate council revised the thesis requirement "to include artistic production, e.g., in literature, art, or music; the performance of a project, e.g., in education or sociology." The first master of fine arts degrees were awarded in 1925 and 1926 for two symphonic compositions and a painting. In 1929, the School of Fine Arts was founded with the goal of coordinating and integrating work into music, theater, and the graphic and plastic arts. The English department at first lagged behind the fine arts in accepting creative work. Norman Foerster, appointed director of the new School of Letters in 1930, finally persuaded the department to accept creative dissertations. The first master's degree was granted in 1931 for a collection of poems, and a doctoral degree was awarded in 1935 for a group of essays. Foerster was also influential in founding the Iowa Writers' Workshop, the most widely copied of the Iowa programs in the creative arts. Although the name was not officially used until 1939, the Iowa Writers' Workshop traces its beginnings to the first graduate courses in writing in 1936.

The two-year program is divided into poetry and fiction workshops that meet weekly—poets on Monday, fiction writers on Tuesday. The writers discuss and criticize one another's work. Students submit book-length manuscripts as theses. The workshop instructors tend to have unique teaching styles. Some give detailed instructions for improvement, while others leave the discussion to the writers, whose commentaries are sometimes devastating. The workshop developed a reputation as the finest writ-

ing program in the country under the leadership of Paul Engle, a published poet and native Iowan, who directed the workshop from 1942 to 1965. Saul Maloff, a former member of the Writers' Workshop, wrote in *Publishers Weekly*, "If any institution can be said to owe its life to the volcanic will and drive of one man, the poet Paul Engle, a native son, must be held accountable, for it was he who presided over its coming of age with a ferocious single-mindedness verging on monomania." Engle said that he recruited talented writers the way a coach recruits athletes, and he was remarkably successful in raising money to lure them to Iowa. After resigning as director in 1965, Engle established the International Writing Program, which brings prominent foreign writers to Iowa City.

In addition to a small core of tenured professors, courses are taught by visiting instructors who stay for a year or two. The faculty has included some of literature's brightest lights: poet Robert Lowell, novelist and poet Robert Penn Warren (twice winner of the Pulitzer Prize for poetry [1958 and 1979] and winner of the 1947 Pulitzer Prize in fiction for *All the King's Men*), novelist Vance Bourjaily, novelist Stanley Elkin, novelist and short story writer John Cheever (winner of the 1979 Pulitzer Prize in fiction for *The Short Stories of John Cheever*), novelist Kurt Vonnegut, novelist Philip Roth, novelist and short story writer Frank Conroy, and poet Galway Kinnel (winner of the Pulitzer Prize for poetry in 1983). Students, many of whom have come back to teach, have included novelist Flannery O'Connor, poet Donald Justice (winner of the Pulitzer Prize for poetry in 1980), and novelists Gail Godwin, John Irving, and Raymond Carver. More than 300 writers gathered in Iowa City in May 1986 to celebrate the workshop's 50th anniversary.

Since the 1960s, hundreds of other schools have created graduate and undergraduate writing programs, many initially directed by former Iowa Workshop participants. The master of fine arts degree has become almost a requirement for entry into a literary career. At Iowa, at least, students consider themselves free to write whatever they please, no matter how unfashionable. However, over the years, critics have charged that Iowa and other university writing programs encourage conformist writing designed to earn approval in the classroom. They believe that workshop graduates end up teaching writing at universities while publishing mediocre work in small magazines. During the 50th anniversary celebrations in 1986, Howard Moss, poetry editor of the *New Yorker*, noted that Iowa, the first of the writing programs, "has become a whipping boy for all that's wrong with any of them. It can't make you a writer. You're talented or not."

Since World War II, the university has continued to build on the foundations laid in the 1920s and 1930s. Enrollment continuously increased, from some 5,000 students in 1945 to a peak of about 30,000 in 1984. Enrollment in 1994 was 26,932. The practical applications of scientific research continued to be emphasized, most notably in the investigations into outer space of James

Van Allen of Iowa's Astrophysics Department. Van Allen and the department have contributed to NASA missions by building equipment and analyzing data. Van Allen himself is probably best known for his discovery of two doughnut-shaped zones of charged particles that encircle the earth, now called the Van Allen radiation belts.

Iowa's thriving Writer's Workshop and its continuing contribution to scientific research would seem to bear out Dean Seashore's view that the arts and the sciences make equal contributions to the academic world.

Further Reading: More than 325 photographs enrich the historical overview in John Gerber's *A Pictorial History of the University of Iowa* (Iowa City: University of Iowa Press, 1988). In *The University of Iowa in the Twentieth Century: An*

Institutional History (Iowa City: University of Iowa Press, 1990), Stow Parsons presents a detailed narrative history. Larry Perl, a journalism school graduate, offers a jazzier style and more attention to student life in *Calm and Secure on Thy Hill: A Retrospective of the University of Iowa* (Iowa City: University of Iowa Alumni Association, 1978), based on a series of articles in the Iowa City *Daily Iowan*. Steven Wilbers' *The Iowan Writers Workshop* (Iowa City: University of Iowa Press, 1980) traces the history of this innovative and influential program. For a complete listing of books and magazine articles about the university, see Earl M. Rogers, *A Bibliography of the History of the University of Iowa, 1848–1978* (Iowa City: University of Iowa Libraries, 1979).

—Jan Rogozinski

UNIVERSITY OF LEIDEN

(Leiden, Netherlands)

- Location:** Inside a former convent of White Nuns and in other buildings in the city of Leiden (also spelled "Leyden" in English or "Lijden" in Dutch), 30 miles southwest of Amsterdam.
- Description:** "Rijksuniversiteit te Leiden" in Dutch; the oldest university in the Netherlands, founded by William the Silent in 1575; historically famous as a center of Calvinist theology, Oriental studies, and botany; now a multi-faculty university, with around 17,000 students.
- Information:** Secretaris, Rijksuniversiteit
Stationsweg 46
P.O. Box 9500
2300 RA Leiden
Netherlands
(71) 27 2727

The University of Leiden, the oldest in the Netherlands, has been closely involved in many of the major events and movements that have shaped the Dutch nation ever since it was founded in 1575, during the struggle for independence from Spain. Today it is one of several institutions of higher education and has lost its unique role as the leading center of Dutch learning, but it retains a distinctive character nonetheless.

Until 1425 there was no university in any of the small states and principalities known as the Low Countries (modern Belgium, Luxembourg, the Netherlands, and northeastern France). The foundation of the University of Louvain (or Leuven) in that year provided some opportunities for higher education, but its adherence to the doctrines of the Catholic Church—a feature shared, of course, with all universities in western Europe at that date—presented problems for the already growing minority who questioned those doctrines and the enormous power and wealth of the Church. Over the years that minority became more organized into Lutheran and Calvinist groups that rejected Catholic authority altogether, and attempts to suppress them became more determined and brutal under both Charles V, Holy Roman Emperor and overlord of the Low Countries, and his son and successor Philip II, king of Spain.

Militant opposition to Philip's policies, led by William the Silent, prince of Orange, and others among his own Dutch officials, broke out in 1566–67 and again from 1572. Leiden, a center of Calvinist and other anti-Spanish

movements, was besieged by Philip's troops (for a second time) from May 1574 onward, but it was relieved with supplies brought on barges after the breaking of the dikes to flood the plain around the city. The end of the siege is still celebrated every year on October 3 with the eating of carrots and onions, the vegetables left behind by the retreating Spanish, and of herring and white bread, the first foods brought into the city by the rebels. This date may also be taken to symbolize the foundation of the university, which was first proposed by William the Silent in a letter dated December 28, 1574, addressed to the states assemblies of Holland and Zeeland. It was formally established by the two provinces the following year, in commemoration of the city's deliverance.

Johan van der Does, already famous as a leading defender of the city during the siege, and later renowned as a poet under the Latin pen name Janus Dousa, chaired a committee appointed by the states assembly of Holland which composed the charter for the new university (*Academia Lugduno Batava*) issued on January 6, 1575, in the name, somewhat bizarrely, of King Philip, since the rebels did not create their own government of the United Provinces until 1581. Its provisions appear to have been based on the examples of the Academy of Geneva, created by John Calvin himself, and the University of Louvain. The opening ceremony took place on February 8, 1575. Until 1577 the university was housed in the former convent of Saint Barbara, on the Rapenburg Canal; then it moved into the convent of the Faille-Mantled Beguines nearby; and in 1581 it also took over the convent of the White Nuns, on the canal's other bank. It is this historic building which, as the New Academy, is still the university's headquarters.

With just 2 students in 1575 and 14 in 1576, the new university's professors, influenced by four of their number who had moved to the city from Geneva, devoted their energies less to teaching than to quarreling with the city fathers over the university's rules and its relationship with the city's schools and churches. On June 2, 1575, William himself intervened to impose a new administration led by a rector, who, significantly, had to be a Dutch-speaker, and two or three curators appointed by the city. Three years later, when the States of Holland forced the university to give up administering the oath of loyalty to Calvinist doctrine which William had reluctantly imposed on staff and students alike, the superiority of the secular authorities over the dogmatists among the faculty was further reinforced. The university was probably unique in Europe at that date, and for two centuries to come, in not imposing a religious oath on its members.



University of Leiden

Perhaps partly because of this factor, by 1581 there were more than 40 students in Leiden, divided into two groups: those who studied theology, most of whom were “bursars,” receiving scholarships provided by the provinces and living together in a seminary known as the States College; and those studying other subjects, who lived in private lodges.

In 1586, the city authorities successfully resisted the plans of the English Earl of Leicester, the temporary, unpopular, and ineffectual governor of the rebel provinces, to move the university to Utrecht and thus deprive them of “their only and most precious pearl.” Instead they set about enhancing its value. The library, founded in 1587, gradually expanded to fill the convent of the Faille-Mantled Beguines—also known as the Old Academy (it now contains more than 2 million books), and the university embarked upon its own “golden age” just as the United Provinces expelled the Spanish and started theirs.

During the seventeenth century Leiden was probably the single most important and influential university for European Protestants, attracting students and scholars from England, Germany, and other countries as well as from the United Provinces, all of whom shared in teaching and research conducted mainly in Latin. Indeed, the average proportion of foreigners among the students at Leiden has been estimated to have been around 41 percent in the years up to 1601, around 43 percent between 1601 and 1625, and as much as 52 percent between 1626 and 1650, which would be extraordinary at any university even today. In addition, Leiden retained its primacy in the higher education of the Dutch nation, although other provinces founded a total of five more universities between 1585 and 1656, mainly because Holland remained the wealthiest, most populous, and culturally most influential province and Leiden the most cosmopolitan and most substantially endowed university.

Leiden’s prestige was closely bound up with that of the Calvinist church. Although the church accounted for a relatively small minority of the population—probably no more than around 10 percent—it had been closely identified with the struggle for independence, and now, through its Leiden-trained ministers and its monopoly of legally approved religious services, claimed the right to admonish those secular powerholders whom it considered too tolerant or too lax, just as John Calvin himself had in Geneva. This was the context in which a theological debate among scholars developed into a nationwide political crisis. In 1603 the university appointed Jakob Hermanns—known in Latin as Jacobus Arminius—to one of its professorships of theology. In the following year he and his colleague Franz (Franciscus) Gomarus took opposing sides in a public debate on the question of salvation, Arminius arguing that human beings could affect their chances of salvation by their free acceptance of God’s grace, Gomarus following Calvinist orthodoxy in asserting that each person’s fate is predestined by God

regardless of individual acts. Arminius’ rebellion against Calvin’s doctrines might have remained a merely academic scandal if his death in 1609 had not been followed in 1610 by his supporters’ decision to present a Remonstrance, a demand for toleration of their views, to the states assemblies of Holland and Friesland, the two provinces in which there were then universities and in which the training of ministers was therefore a political issue. The Arminians, or Remonstrants, won the support of the majority in both assemblies, only to find that the so-called Counter-Remonstrants, led by Gomarus and other powerful ministers, were supported by the other provinces, and crucially by Maurice of Nassau, William’s son and his successor as military commander of the country. (He himself had given up his studies at Leiden in 1584 after the assassination of his father.) The subsequent crisis attracted international attention, with Britain supporting the Gomarists and France the Arminians, and was resolved in 1619 by the banishing of 13 Arminian ministers, the purging of the universities, and the execution of Jan van Oldenbarneveldt, the most important statesman in Holland and Maurice’s former mentor. In the same year the synod of Dort (or Dordrecht) reasserted orthodox doctrine, which was imposed with renewed vigor on the universities and schools and, through them, on the country as a whole. Yet enough of the spirit of toleration remained to permit the leading Arminians to return from exile and create their own separate church in 1626: in the Netherlands, as in other countries in this period, the academic community was forced to be notably less tolerant than society at large. (The Arminians’ own academy, the Athenaeum founded in 1632, became the University of Amsterdam.)

One of the scholars purged during the upheaval was Huig van Groot, better known as Hugo Grotius, who had graduated from Leiden in 1598, at the age of 15, and rapidly become known as one of the most brilliant scholars in the Netherlands. His support for Oldenbarneveldt led to his imprisonment and, following his escape to France in 1621, the loss of his talents to his nation, for he remained in exile until his death in 1645. It is one of the countless ironies of history that this particular Leiden graduate, widely regarded as the first scholar to formulate the principles of international law, is now probably better known, and exercises a greater influence, in the Netherlands as in other countries, than any other graduate of the university. Another side-effect of the upheaval was that the cultural supremacy of Holland over the other provinces was reinforced—to the extent that, like England within Britain, its name came to misrepresent the entire country—by way of the Staten Bible, the official translation into the form of Dutch prevailing in the province, which was commissioned by the synod of Dort and completed by scholars at Leiden. Like Luther’s translation in German-speaking regions, or the authorized version in English-speaking ones, this version of the Christian scrip-

tures had a formative influence on most people, but especially on writers and scholars, until well into the nineteenth century. Still another result of the triumph of orthodoxy may well have been the determination of the "Pilgrim Fathers," the founders of Massachusetts, to impose a similar orthodoxy in their new home, for they resided in Leiden between their departure from England in 1609 and their voyage to North America in 1620 and witnessed the rise and fall of the Arminian heresy and its disruptive effects.

As a direct offshoot of its theological concerns, Leiden soon became a center of European knowledge and research in languages and literatures. Joseph Justus Scaliger, a French Protestant scholar of Italian descent who was at Leiden between 1592 and 1609, when he died, was especially prominent in the study of Latin and Greek, not only in the service of theology but as a means for studying history, politics, and science as well, so that (for example) the study of the Roman historian Tacitus became the basis for study of politics and diplomacy in general, for Grotius and for many others. More distinctively, during the seventeenth century Leiden came to rival the ancient universities of Europe as a center for the study of the Semitic languages. Scaliger, although a classicist himself, encouraged the new discipline, while his colleague Raphelengius, professor of Hebrew, also served as university printer, ensuring that the press maintained fonts for printing texts in Hebrew, Arabic, Ethiopian, and other "exotic" scripts. These continued to be used on behalf of the university until 1712 by the Elseviers, the famous printing dynasty which had started in Leiden around 1581. The Sorbonne was the first European university to appoint a professor of Arabic; Leiden was the second, and it was at Leiden that Thomas Erpenius became one of the first Europeans to make a serious study of the grammar of Arabic and that Jacob Golius, one of many linguists trained by Scaliger, compiled one of the first dictionaries of that language to be published in Europe. Later, Albert Schultens continued in the tradition by pioneering the study of Hebrew, Arabic, and other Semitic languages as a single family.

The work of these scholars and their successors was appreciated not only within the academic community at Leiden but by the wider community of educated Dutch citizens involved directly or indirectly in the extensive trade between the Netherlands and its Muslim, Arabic-speaking colonies in what are now India and Indonesia. Golius was even appointed by the states general assembly of the United Provinces to conduct official correspondence in Arabic with the rulers of the Muslim territories of North Africa, with which the Dutch state was among the first in Europe to maintain diplomatic relations.

However, the university was not exclusively concerned with theology or the languages associated with it. It also gained a Europe-wide reputation in science and medicine. Its botanical gardens, founded in 1587 as a garden of

medicinal herbs, in a field behind the New Academy, were laid out on rational principles devised by the French botanist Charles l'Ecluse—known at Leiden as Carolus Clusius—who not only led the way in the Europe-wide program of classifying and investigating the properties of plants, but was also credited with, perhaps as early as 1573, introducing the tulip, which now seems so typically Dutch, from its original location in Turkey to his garden in Leiden and from there across the country. Leiden was also the home of Willibrord Snellius, the mathematician who devised Snell's Law, the formula that describes optical refraction. Snell was the most influential among a number of Leiden mathematicians whose work was eagerly taken up and applied in the practical field of navigation, then so crucial to the wealth and power of the United Provinces.

From 1593 onward the university also had a *Theatrum Anatomicum*, a dissecting room, at first located in the Old Academy, which was one of the few in any European university. During the eighteenth century the number of foreign students in the university's faculty of medicine averaged around 400, making it among the largest and most cosmopolitan of the time and bringing great renown to its most important professor, Hermann Boerhaave, who taught there from 1701 until his death in 1738. An expert on human anatomy as well as on entomology, he carried out important research on perspiration and on the epidemiology of smallpox; his textbooks of medical principles were translated into numerous European languages. In the summer months, when work with corpses was impossible, the room was used to display the university's steadily growing collection of curiosities, such as Egyptian mummies, stuffed crocodiles, and other objects from distant lands.

Just as the university's golden age coincided with that of the Dutch nation itself, so its gradual contraction and decline during the eighteenth century occurred as the United Provinces fell further and further behind in economic and colonial competition with Britain. The city of Leiden itself suffered from the rise of rival centers of weaving and other industries, its population falling from a peak of around 100,000 in 1640 to around 30,000 in 1800. Economic problems in turn contributed to a mounting political crisis which, as in earlier times of trouble, came to focus on the struggle between the monarchical tendencies of the House of Orange and the republican tradition of the states assemblies. In these years the University of Leiden gained a reputation for conservatism which was enhanced by the writings of Adriaan Kluit, a professor of history who was a vociferous supporter of the claims of William V, the prince of Orange, who became absolute ruler in 1787.

However, following the French Revolution of 1789, the anti-absolutist Patriot movement was revived and, in 1795, with help from French troops, it overthrew William V and established the Batavian Republic. Like the other Dutch universities, Leiden was now opened to other

teachers and students apart from the orthodox Calvinists who had dominated its first two centuries. But in 1806 the republic gave way to a new "Kingdom of Holland" ruled by Louis Bonaparte, brother of the French emperor Napoléon, and only Leiden and Groningen survived Napoléon's drastic reforms of the Dutch universities in 1810, which placed them under the strict supervision of a board of control, charged with assimilating their work with the principles of the French empire.

After the restoration of the *ancien regime* in 1813, when the Kingdom of the Netherlands was created under the Orange family, Leiden and Groningen were joined by a revived university at Utrecht to form the extant group of three state-controlled universities (alongside the municipal university of Amsterdam and two universities controlled by Christian churches). All three continued to be regulated by the Napoléonic system, which had two notable effects. First, the centralization of power at the national level, a trend advocated by Willem Bilderdijk, who followed Kluit in promoting an absolutist interpretation of history at Leiden, meant that the supervisory powers formerly exercised by the city of Leiden and the province of Holland were never revived. Second, the formal separation of the natural sciences from the arts allowed the three state universities to take part in the great academic sea-change which was to transform higher education all over Europe and North America during the nineteenth century.

Leiden also benefited from the prestige of being the oldest and most famous of the Dutch universities, a prestige which was enhanced by the creation of a group of national museums in the city, which were and are closely associated with the university. The first of these, the Museum of Natural History, was founded in 1820 on the basis of the royal collections donated to the university by King William I five years before. It was followed in 1821 by the Museum of Archeology and in 1837 by the Museum of Ethnology, this last being notable for its important and fascinating collection of Japanalia, a byproduct of the period (1639–1854) when the Dutch were the only Europeans permitted to trade with Japan.

Latin remained the language of instruction at Leiden, Groningen, and Utrecht long after it had been replaced by native languages at most other European universities, and the need to provide elementary instruction in Latin for most of the students entering from ordinary schools continued to take up time and resources that might have been devoted to developing instruction and research in the natural sciences, social studies, and other newer forms of learning. Even so, the university did not lack developments in these directions. It first acquired a chemical laboratory in 1859, a physiological laboratory in 1866, and a modernized astronomical observatory in 1868; a pharmaceutical laboratory was added in 1889 and separate laboratories for organic and inorganic chemistry followed in 1901 and 1918 respectively. The high standards of research achieved

with these new facilities may be inferred from the awarding of three Nobel Prizes to scholars of the university. Hendrik Antoon Lorentz, who had graduated from Leiden at the age of 16 and been appointed a professor at 24, was awarded the physics prize, jointly with his student Pieter Zeeman, in 1902, for their work on electromagnetism; Heike Kamerlingh Onnes received the same prize 11 years later, having liquefied helium and opening up the whole field of superconductivity; and Willem Einthoven, a pioneer of electrocardiography, was awarded the physiology or medicine prize in 1924.

However, for better or worse scientists are generally less well known to the public than their colleagues in other faculties, and between the two world wars the single most famous professor at Leiden was probably the historian Johan Huizinga, whose book *The Waning of the Middle Ages*, first published in 1919, is widely regarded as a classic. As rector of the university he not only presided over the continuing expansion in student numbers—which rose from 798 (including around 100 women) in 1900 to 2,410 (including around 800 women) in 1940—but became almost equally well known, at least within his own country, as an implacable opponent of the Nazi regime in neighboring Germany. He caused controversy as early as 1933, the first year both of his term of office and of Hitler's dictatorship, when he forbade the participation of a Nazi-dominated group of German students in an international conference on university property. This act alone marked him for punishment seven years later, when the Netherlands was invaded and incorporated into the Nazi empire.

Huizinga was by no means alone in his protests against the occupying power which, unlike in France and other countries, found very few collaborators anywhere in the Netherlands. At Leiden R.P. Cleveringa, dean of the law faculty, and his colleague B.M. Telders led courageous protests against the anti-Semitic decrees issued in October 1940, including the circulation of a petition signed by more than 70 percent of the student body. The university was closed in November that year and, once it was clear that its staff and students would not cooperate in converting it into a Nazi institution, it was formally "abolished" in November 1942.

The university reopened in September 1945, four months after the end of the war in Europe. Earlier that year Huizinga, who had been taken hostage in 1940 but later released, had died of natural causes, and Telders had been murdered at the Bergen-Belsen concentration camp, but Cleveringa and others, released from imprisonment, were able to restore the university to its former academic standing.

The past 50 years have been typified, at Leiden as at other universities across the developed world, by unprecedented expansion and transformation, as the university authorities have responded to changes in society. The single most striking change has been the rise in student numbers, from 2,924 in 1945 to 7,878 in

1965, and then to 17,190 in 1993. This process has necessarily altered the everyday experience of studying in Leiden as well as the social status of its graduates. As elsewhere the expansion was accompanied in the late 1960s by a brief and ultimately ineffectual outburst of student protest, which at Leiden culminated in the events of May 1969, when part of the headquarters building was occupied for 12 days and converted into a "discussion center" by student radicals. But the lasting effect of this historic change has been to make Leiden, like its counterparts in other countries, an institution concerned less with the training of a homogeneous national elite (although that process still continues to some extent) and much more with the education of a diverse range of professional specialists and the provision of research services to the government and private corporations.

Although Leiden has thus, inevitably, lost some of its unique character it remains the leading university in the Netherlands and a center of excellence in both the humani-

ties and the natural sciences. Less tangibly but perhaps even more importantly, its teachers and students alike can lay claim to, and variously try to live up to, the Dutch tradition of independence and free thought which was inaugurated by William the Silent, the father of the nation and of the university, then betrayed during the Arminian crisis, only to be reaffirmed by individual scholars over the years and by the university as a whole during World War II.

Further Reading: M.W. Juriaanse's *The Founding of Leyden University* (Leiden: E.J. Brill, 1965) is a fascinating account of its early years, but the history of its golden age and the period since is scattered through general histories of the Netherlands, ranging both in age and quality; one of the best is Bernard H.M. Vlekke's exemplary study *Evolution of the Dutch Nation* (New York: Roy, 1945).

—Patrick Heenan

UNIVERSITY OF LONDON

(London, England)

Location:	Senate House and several member institutions in Bloomsbury; other member institutions in South Kensington and other districts of Greater London; also in Wye, Kent, England; and in Paris.
Description:	A federal university, with the second largest number of students among British universities, comprising 6 multi-faculty colleges, 9 medical schools, and 22 other specialist schools and institutes.
Information:	The Registrar The Senate House University of London Malet Street London WC1E 7HU England (0171) 636 8000

The University of London is a federation of general colleges, medical schools, and other institutions of higher education which has grown up almost haphazardly since its formal creation in 1836, partly by absorbing several older institutions. It is the product of two interconnected processes: the development over several hundred years of formal courses in medicine, linked to the numerous hospitals in the British capital, and, from 1828 onward, the piecemeal creation of alternatives to Oxford and Cambridge, which until that year were the only universities in England (Scottish and Irish education being separate). Alternatives were needed for those groups whom the ancient universities, as they are known, have traditionally excluded, up to various points in the nineteenth and twentieth centuries: Catholics, Nonconformist Protestants, Jews, and the non-religious; women; men from working-class backgrounds; and people wishing to study near their homes, whether in London itself or in cities elsewhere in Great Britain and the British Empire, where "daughter" institutions were created. In addition the university has played a leading role in the long-term trend away from general education in the liberal arts and toward specialized professional training, at first (and still predominantly) in medicine, but later also in the natural sciences, social studies, and modern languages, all of which were long neglected or underrated at Oxford and Cambridge.

Among the 37 institutions which are now members of the University of London, the oldest by far are the medical

schools attached to two medieval hospitals, Saint Bartholomew's and Saint Thomas's, affectionately known to generations of Londoners as Bart's and Tommy's. Bart's was established in 1123, Tommy's perhaps even earlier, although its present name and location appear to date from 1215. Although it is impossible to establish when either hospital first began training doctors, for lack of documentary evidence, both were almost certainly doing so by the time that they were taken over by the Corporation of the City of London, Bart's in 1546 and Tommy's in 1551. The formal organization of medical schools, complete with regulations, examinations, and certificates, was completed in the early eighteenth century, by which time there were five more hospitals in London: the Westminster founded in 1716; Guy's from 1726; Saint George's from 1733; the London from 1740; and the Middlesex from 1745. Guy's and Tommy's, which stood next door to each other, seem to have been the first to organize programs of lectures, beginning in 1768, while the London is believed to have created the first medical school organizationally separate from the hospital itself, in 1785. The medical schools of all these hospitals, as well as the school attached to the Charing Cross Hospital, founded in 1818, were to join the university soon after its foundation.

The training of barristers (lawyers who represent clients in court) has also been concentrated in London since the fifteenth century, or perhaps earlier, at the four colleges known as the Inns of Court and at the now-defunct Inns of Chancery. However, these have always been independent, rejecting an invitation to join the University of London in 1899. Instead they elected four members to its senate from 1900 to 1929, and after World War II they developed a cooperative relationship with the university's Institute of Advanced Legal Studies.

While medical and legal training was evolving in London, higher education in the liberal arts in England had long since become the exclusive business of Oxford and Cambridge. Their monopoly was broken from 1596, when Gresham College was established in Bishopsgate in London in the former home of the merchant Sir Thomas Gresham (1519–76), perhaps best known for the "law" of economics named for him ("Bad money drives out good"). Between 1660 and 1710 this college also served as the headquarters of the Royal Society, the influential learned society created by King Charles II. However, by 1768 the college had lost prestige and students alike. Gresham's home was demolished and the college named for him continued on a reduced scale and in a series of locations, until it was absorbed into the separate City University established in 1966.



University of London

It was against this background of success in professional education and relative failure in the teaching of the liberal arts that a true University of London was first proposed. On February 9, 1825, *The Times*, then the leading British newspaper, published an open letter setting out the proposal, written by the poet Thomas Campbell to his fellow-Scot, the politician Henry Brougham. He responded by inviting representatives from religious groups whose members were excluded from Oxford and Cambridge, including Baptists, Jews, and Catholics, to join in planning the new institution, which, like the older universities and the medical schools, would still exclude women. The London University which they devised, better known

from the outset as University College, London, was opened in Bloomsbury in October 1828.

University College (usually abbreviated UCL) is still based in its original range of neoclassical buildings designed by William Wilkins, although several additional buildings have since been squeezed onto its site. It would eventually become, as it remains, the largest single member institution of the federal University of London, with which many Londoners still confuse it. Its departments now include the Slade School of Fine Art founded in 1871, which has trained such prominent British painters as Sir Stanley Spencer, and the Petrie Museum of Egyptian Archaeology, which commemorates the work of

UCL's first professor of Egyptology, Sir Flinders Petrie. Its most famous mummy, however, is not in the museum but inside a glass-fronted wooden cabinet near the college's main entrance. This is the "Auto-Icon" of the philosopher Jeremy Bentham (1748–1832), whose utilitarian and liberal principles greatly influenced the founders of UCL. His seated, embalmed body, fully clothed and with a hat on its wax head, has been on display since 1850, while his real head, which was displayed on a wooden platter between his feet until 1948, is now kept in a safe.

The founders of UCL appear to have envisaged that the college and the university would be one and the same thing (as Trinity College and the University of Dublin had been since 1598), but its right to be known as "London University" was challenged within one year of its opening. Almost as soon as Brougham and his colleagues began raising funds, a campaign for a rival college, which would follow Oxford, Cambridge, and Dublin in being open only to members of the established Church of England (and its offshoot, the Church of Ireland), had been started by a group of bishops and noblemen headed by the Duke of Wellington. Unlike the "godless" Bloomsbury foundation in 1829, this orthodox competitor was given a royal charter which included permission to call itself King's College when it opened two years later on the Strand, then the main street between the cities of London and Westminster. Part of its original building, designed by Sir Robert Smirke to fit with the facade of Somerset House, the government offices next door to it, was torn down in 1966, in spite of protests, to be replaced six years later by a Modernist block.

Neither the two new colleges nor the medical schools had any right to award degrees. In 1836 this crucial function was given to a separate board of examiners, appointed by the British government, which, under its own royal charter of November 1836, was to call itself the Senate of the University of London. Thus the federal university was created as the fourth university in England, just four years after the University of Durham had been founded as the third. Its dependence on the government—in contrast to its predecessors and its own member institutions—was confirmed by its being given office space inside Somerset House.

During its first two decades the new university became the national examining body, not only for UCL and King's but also for 30 colleges in other cities in Great Britain and Ireland as well as for 69 medical schools, including the 8 in London which have already been mentioned, the medical faculties of UCL and King's, which had created their own hospitals in 1837 and 1840 respectively, and the new medical school at Saint Mary's Hospital in Paddington, founded in 1854. In 1853 the university left Somerset House for another government block, Marlborough House, but moved on again only three years later to Burlington House. There in 1858 the senate began promoting the teaching of the

natural sciences on the basis of practical as well as written work by introducing examinations for the bachelor of science and doctor of science, building on the success of such institutions as UCL's Birkbeck Laboratory, founded in 1846 as the first university chemistry laboratory in the United Kingdom.

In the same year the university received its second royal charter, which opened its examinations, except in medicine, to all who wished to take them, regardless of the school or college at which they had studied. This was the origin of the distinction, formalized in 1900, between "internal" students, taught at the university's colleges and medical schools, and "external" students. Under this unprecedented arrangement the numbers taking examinations rose from 358 in 1855 to 1,459 in 1870. After 1865, many students who were living in Mauritius, Gibraltar, and Canada were allowed to take the examination in their home countries. In just 30 years the university had passed from being a local compromise between UCL and King's to being already one of the leading educational bodies in the British Empire, and not only through its own examinations. Its model of an examining university separated from teaching colleges was first borrowed for the Queen's University of Ireland (now the National University) in 1850. This was to be followed by the University of Toronto in Canada in 1853, the three university colleges of India set up at Calcutta, Bombay, and Madras in 1857, the University of New Zealand in 1874 and, in England itself, the Victoria University, established in 1880 to provide examinations for colleges in Manchester, Leeds, and Liverpool, all of which had used the London examinations until that year. (The Victoria University was abolished in 1903 and its three colleges became separate universities.)

As the University of London grew, two events signaled that it had at last gained official acceptance on equal terms with the three other English universities, the six in Scotland, and Trinity College, Dublin. In 1867 its graduates, who form the university's convocation, were given the right to elect a member of parliament to represent the university, a right which they exercised until the abolition of the university seats in 1950.

In 1870 the university moved into its first purpose-built headquarters, after three years during which the building was being constructed and the university officials worked in a house in Savile Row. The university building in Burlington Gardens now houses the Museum of Mankind, a branch of the British Museum, but the university insignia and the statues which were installed in 1870 can still be seen there.

In 1869 the university further extended its unique openness to types of students excluded from other British universities by introducing examinations for women, who until then had had access to higher education only at two small colleges which were located in London but did not belong to the university—Queen's College, founded in 1848, and Bedford College, founded in 1849.

At first the women's examinations led only to certificates of study, but in 1880 the university became the first in the British Empire to award degrees on equal terms to men and women, two years after UCL had become the first British college to admit women as full members. King's College, in contrast, kept women literally at a distance, offering lectures for them in Kensington, four miles from its main buildings, from 1878 and creating a formal ladies' department there in 1885. This became the women's department in 1902, King's College for Women in 1908, King's College of Household and Social Sciences in 1928, and Queen Elizabeth College, for both women and men, in 1953. At last, 100 years after its foundation, it became once again an integral part of King's College. Meanwhile, the availability of degrees brought a group of women's colleges into membership in the university. These were Bedford College (but not Queen's, which became a girls' school); the London School of Medicine for Women, which had been set up in 1874 and was later made into the Royal Free Hospital School of Medicine; Westfield College, founded in 1882; and Royal Holloway College, opened in 1886 in an enormous French Renaissance building, with its own picture gallery provided by its founder, the businessman Thomas Holloway, on Egham Hill (then in the county of Surrey, now in Greater London).

Between 1870 and 1895 the numbers of men and women taking the university's various examinations rose from 1,459 to 6,219. Even as this increase continued the university became divided by controversy over its structure, as UCL, King's, and 10 London medical schools, the 12 largest members of the university, sought degree-giving powers of their own. The whole system was investigated inconclusively by a royal commission in 1888, and in 1891 plans were made for a separate Albert University, which would provide both teaching and examinations on the traditional model for the 12 colleges, leaving the University of London as an examining board for a variety of smaller institutions. These were abandoned in the face of opposition within UCL and among politicians in favor of a second royal commission, which eventually led to the London University Act, passed by parliament in 1898.

The result was a new set of statutes for the university, which came into effect in 1900, the same year that its headquarters moved yet again, this time to the Imperial Institute, a grandiose neo-Gothic building in South Kensington. The senate was overhauled to represent alumni, teachers, the Inns of Court (as mentioned above), and local government bodies as well as the national government. The university was to have two categories of members: in London a variety of smaller colleges known as "institutions having recognized teachers," which had their courses validated by the university but remained separate; and those institutions which were full members of the federation. This second group included not only all

the member institutions mentioned so far, but also six small colleges run by various Christian denominations (none now in the university); the South Eastern Agricultural College in the county of Kent, which had been founded in 1894 and which is now called Wye College; the Royal College of Science (incorporating the Royal School of Mines) and the Central Technical College, both in South Kensington; and one of the most famous and influential members of the federation, the London School of Economics and Political Science (the LSE).

The first institution of its kind in Britain, the LSE was established in 1895 by Sidney and Beatrice Webb, leading lights in the Fabian Society, an influential group of socialist intellectuals, using money left by their friend Henry Hutchinson to be used for the purposes of the society and its version of socialism. However, the Webbs rebuffed the efforts of their friend and colleague, the playwright George Bernard Shaw, to make the school an avowedly socialist institution, preferring to dedicate it to the impartial investigation of economic and social questions, thus attracting vital support from such conservative bodies as the London Chamber of Commerce. One has to wonder, not only what Hutchinson would have thought of the way that the Webbs interpreted his will, but why they believed that impartiality could be achieved in such inevitably controversial subjects. In any event, the LSE has been a lively forum of debate as well as a leading international center of teaching and research across the range of social studies, its staff having included such decidedly anti-socialist thinkers as Friedrich Hayek and Karl Popper alongside, for example, William Beveridge, a member of the Liberal Party whose famous report, *Social Insurance* (1942), laid the foundations for the British welfare state, and the political scientist Harold Laski, a prominent member of the Labour Party.

Now that the university, already the largest in the British Empire, was active in promoting teaching and research, as well as in examining their results, it expanded further, mainly by taking in several more institutions which had existed separately. In 1905 the Goldsmiths' Company gave their Technical and Recreative Institute, founded in 1891 at New Cross in south London, to the university, which renamed it Goldsmiths' College. In 1907 and 1910 respectively, UCL and King's gave up their independent governing bodies, becoming departments of the university itself. Also in 1907 the South Kensington scientific schools were merged, becoming the Imperial College of Science and Technology, and the East London College, originating in 1887 as part of the "People's Palace" group of schools created for the poor of the East End of London, joined the federation, being renamed Queen Mary College in 1934. In 1916 a School of Oriental Studies was created, taking over teachers, books, and other resources from parts of UCL and King's; it became the School of Oriental and African Studies (SOAS) in 1938. Birkbeck College, which had been founded as the London Mechanics' Institute in 1823

by George Birkbeck (later a member of the first council of UCL), was brought into the university in 1920. It continues to specialize in offering part-time and evening courses for people who wish to study for a university degree while working. The London School of Hygiene and Tropical Medicine was created in 1924 as an expansion of the School of Tropical Medicine created in 1899, and in 1929 it moved into its own building (which had become well-known for the larger-than-life-size reliefs of fleas and other disease carriers on its frontage). In 1925 the School of Pharmacy, founded in 1842, also joined the university.

The university's existing member institutions by no means stood still while these new members were being admitted. For example, while Imperial College led the way in promoting training and research in such new industries as aeronautics, chemical engineering, and petroleum geology, UCL and King's were among the first colleges in Britain to develop courses in electrical engineering; Sir Ambrose Fleming, a professor at UCL, collaborated with Edison and Marconi in work on lighting, power supply, and radio. In addition, the university as a whole made decisive moves into providing for postgraduate studies, awarding its first Ph.D.s in 1921, the same year that the senate created the first of the university's institutes for advanced study, the Institute of Historical Research (the IHR). However, the most outstanding result of the university's research efforts between the world wars was the discovery of penicillin by Sir Alexander Fleming (no relation to Sir Ambrose) at Saint Mary's Hospital Medical School in 1928.

The year 1929 proved to be a turning point in the university's history. As yet another new set of statutes came into effect, the non-university members of the senate were replaced by the heads of the larger colleges; a new body, the court, was appointed by the senate, the London County Council, and the government to administer the university's finances; and serious work began on the removal of the university's headquarters and some of its member institutions to a 10.5-acre site in Bloomsbury, near UCL, LSE, and the British Museum. In 1931, the Modernist architect Charles Holden, well-known for designing 40 stations on the Tube (the London Underground rail network), was invited to design the new university quarters, and produced a plan for a single huge structure of Portland stone, culminating in a tower, which would be the tallest building in the city. The tower and two wings at its base were completed in 1937. This building, known as the Senate House, now contains the university's main offices, its library, the IHR, and the School of East European and Slavonic Studies (SEESS). However, partly for financial reasons, a new "balanced" plan was agreed for a group of separate buildings, which together would represent only around one-third of Holden's original "spinal" complex.

Even as Holden's plans were being considered and reshaped the university continued its piecemeal growth.

In 1932 alone it took over the Slavonic studies department which King's College had founded in 1915, creating what is now SEESS, converted the London County Council's Day Training College for teachers into its own Institute of Education, and used an enormous endowment from the textile magnate Samuel Courtauld to open the Courtauld Institute of Art. While the institute itself introduced the discipline of art history to Britain, its galleries, which were at first housed separately, quickly became famous as one of the most important art collections in the country. The two parts of what is affectionately called simply "the Courtauld" were brought together at last in 1989 inside Somerset House, where the university had begun, and where such masterpieces as van Gogh's "Portrait of the Artist with Bandaged Ear" and Manet's "A Bar at the Folies-Bergère" now attract large numbers of visitors. Still another institute, the Institute of Archaeology, was founded in 1937, at the suggestion of Sir Mortimer Wheeler. All the while the numbers of "external" students were steadily rising, both in Britain and overseas. From 1920 onward it became possible to take the university's examinations in places outside the British Empire, and by 1937 there were nearly 5,000 students enrolled at 79 different "overseas centers" of the university, in an academic network which was then and still remains unique.

The outbreak of World War II in 1939 put a stop to all new building plans, as most of the university's schools and institutes were evacuated from London, and the Senate House was taken over by the wartime Ministry of Information. (It is believed to have provided part of the inspiration for the Ministry of Truth in George Orwell's novel *1984*, and indeed its tower appears as such in the feature film based on the novel.) During the war UCL suffered particularly badly from German bombing raids: its library and many other buildings were destroyed and its dome, the symbol of the college, was badly burned. As for the war effort, the university's greatest contribution to it was the work done by Lord Blackett of Imperial College, J.D. Bernal of Birkbeck, and other members of a group known as "Blackett's Circus," whose operational research techniques, developed for military purposes, were later to be adapted to industrial management.

The university began planning further expansion even before the war ended in 1945. The Warburg Institute, a re-creation of the Kulturwissenschaftliche Bibliothek Warburg, which had been brought from Hamburg after the Nazis seized power in Germany in 1933, was made part of the university in 1944 and has since pioneered work in the relatively new field of cultural studies. A new British Postgraduate Medical Federation, uniting several specialist institutes, was established in 1947, and the Royal Veterinary College, founded in 1791, joined the university in 1949. Four more institutes for advanced study were created as well—Advanced Legal Studies in 1947, Commonwealth Studies in 1949, Germanic Studies in 1950, and Classical Studies in 1953.

Along with the Warburg Institute and (for some years) the Courtauld Institute Galleries, all were eventually given space on the Bloomsbury site around the Senate House, where brick buildings designed by Holden took the place of his Portland stone masterpiece, never to be built. They were joined there by the Institute of Education (at first inside the Senate House), SEESS and the IHR (which are still inside it), SOAS and Birkbeck College, the Percival David Foundation of Chinese Art, a research institute and gallery created in 1950, and the University of London Union (ULU), which, along with the library inside the Senate House, is one of the very few university-wide bodies with which most of its students ever have direct contact.

As mentioned above, the university lost its examining powers for three colleges in Manchester, Leeds, and Liverpool in 1880, and between then and 1945 its links with colleges in Birmingham, Sheffield, Bristol, Nottingham, and Reading were also severed as, one by one, they too became independent "civic" universities. Between 1946 and 1971 the University of London entered the last phase of its special role as a "mother of universities." As the British Empire was transformed by the colonial independence movement, first into the British Commonwealth and then into just the Commonwealth, a total of eight colleges in the colonies that became Sudan, Ghana, Uganda, Zambia, Kenya, Tanzania, and Malawi were given special "internal" status, which helped them prepare to become national universities after independence. Similar provisions were made for the British colleges which have since become the Universities of Southampton, Hull, Exeter, and Leicester, as well as for a number of teacher-training colleges which have since joined other universities.

By the 1960s the internal structures of the university were coming under increasing criticism for what was seen as excessive centralization. A number of reforms throughout the decade gave greater powers over course content and postgraduate work to the larger colleges and made the university's boards of studies more representative of all the teaching staff, not just the more senior among them. Give that, for example, UCL, King's, LSE, and Imperial were now each as large and as complex as most of the ordinary British universities, it is perhaps not surprising that these changes were not considered sufficient, and in 1978 parliament introduced further changes through a new University of London Act. King's and UCL became autonomous institutions once again, in 1980 and 1977 respectively; the vice-chancellorship became a full-time salaried post; and the senate was reformed yet again, to give the member institutions greater representation and to provide seats for student representatives for the first time.

The two decades of internal upheaval were also a period of accelerated expansion in the University of London as in British higher education in general. The university's total number of students rose from nearly 54,000 in

1960 to around 64,000 in 1980, although within these figures there was a significant decline in the numbers of external students, mainly because most of the centers at which they had traditionally taken examinations had themselves become degree-granting bodies. New members joined the federation, too. An Institute of Computer Science, existing from 1964 to 1972, led the way in converting many of the colleges to new technologies; Institutes of Latin American Studies and of United States Studies, founded in 1965, completed the university's intellectual coverage of the world; and in 1969 the university took charge of the British Institute in Paris, which had been founded in 1894 as the *Guilde Franco-Anglais* and which still continues to provide courses in French studies for British students and in British studies for French students. Lastly, in 1970 Heythrop College, which specializes in Catholic theology, became the newest member of the federation and at the same time one of its oldest, since it traces its origins to an English Jesuit college established in Leuven (Louvain), now in Belgium, in 1614.

However, the same general process of expansion also brought new institutions into the field of higher education in the London region, breaking the degree-granting monopoly which the university had enjoyed since 1836. From 1964 onwards a number of polytechnics all over England were allowed to give degrees which were validated by a new government body until the 1990s, when all of them became independent universities, further reducing the numbers of external students taking University of London examinations. In 1966 three former colleges of advanced technology were reconstituted as the City University, Brunel University, and the University of Surrey, while a fourth joined the federation as Chelsea College. Finally, in 1969, the Open University was set up to provide "distance learning" through radio, television, and correspondence courses and to supplant the University of London both as the largest university in Britain (in terms of student numbers) and as the leading source of degrees for those combining employment with study.

The late 1960s were also notable, of course, for the eruption of student protests in major cities around the world, fueled by a combination of local grievances, rejection of the traditional professor/student hierarchy, and indignation about events in Vietnam, Czechoslovakia, South Africa, Rhodesia (now Zimbabwe), and other areas of conflict. In Britain the movement began at LSE in January 1967, when Sir Walter Adams, long associated with higher education in Rhodesia, was appointed its director; conflict spread to other colleges and universities throughout 1967 and 1968. Offices were occupied, classes were disrupted, and numerous demonstrations took place, but their only long-term effects were to increase student representation on university bodies and to give LSE and a few other institutions a misleading reputation for political radicalism. By 1970 the movement, always disorganized and chaotic, had petered out.

While still coping with the effects of frequent and complex internal reforms and greatly increased external competition, the University of London next had to face the problems created for all British universities from 1981, when Margaret Thatcher's government decided to cut public spending on higher education for the first time since the university itself had been created by such spending. One response was to encourage a series of mergers among member institutions. In line with changes in the pattern of National Health Service provision in London, the number of hospital-based medical schools has been reduced from the original 12 (all founded up to 1874) to 8, of which two have been reabsorbed into the colleges that originally created them, UCL and King's. The non-medical colleges were also reorganized. Royal Holloway and Bedford Colleges were amalgamated in 1985, and the "New College" thus created, known at first as RH&BNC but now simply as Royal Holloway, was located at Egham Hill, while the old Bedford College in Regents Park was sold off. In the same year Queen Elizabeth and Chelsea Colleges were absorbed into King's (which was briefly known as KQC as a result). In 1987 the IHR took over the Institute of United States Studies, and UCL absorbed the Institute of Archaeology; in 1989, Queen Mary and Westfield Colleges were merged.

An alternative response to the decline in public spending was to seek more funding from private sources, with the result that UCL, Imperial, and LSE, in particular, became larger and wealthier; there was speculation that they might eventually break away from the federation. For the moment, the university remains intact, but since September 1994 it has been governed under yet another set of revised statutes, which have given still more financial and academic autonomy to the larger member institutions. The court, which had grown to have 24 members, and the senate, which had an unwieldy total of 120, have been replaced by a single council, which it is hoped will be more efficient, although the headquarters is still known as the Senate House.

The university which the new council is to govern is still, after so many changes, one of the largest and most diverse in the world, comprising (as of 1995) nine medical schools, six multi-faculty colleges, nine specialist schools, and nine institutes; and, in a looser relationship, the London Business School, Jews College, the Royal Academy of Music, and the Trinity College of Music, the last of the "institutions having recognized teachers." Over the past one and a half centuries the numerous British colleges which the university fostered have become independent, the empire which it served has disappeared, and it is no longer even the only university in London. These developments may make it harder to appreciate just how radical, even shocking, it once was—perhaps especially in imperial yet insular Britain—to construct a university largely with public rather than privileged private funds, to operate it without regard for religion, gender, wealth, or other social divisions, and to make its resources available to anyone who was willing and able to benefit from them (not just in London but across the planet).

Further Reading: This essay could not have been written without recourse to Negley Harte's impressive book *The University of London 1836–1986* (London and Atlantic Highlands, New Jersey: Athlone Press, 1986), which, in spite of its title, gives comprehensive coverage of all the member institutions of the university from 1123 to its year of publication, enlivening the narrative with numerous anecdotes and vignettes as well as over 350 pictures. There are several histories of the leading member institutions, including *The World of University College London, 1828–1978* by Negley Harte and John North (London: University College, 1978); *King's College, London, 1828–1978* by Gordon Huelin (London: University of London, King's College, 1978); and *My LSE*, edited by Ronald Hayman (London: Robson Books, 1977), which is a collection of memoirs by former students.

—Patrick Heenan

UNIVERSITY OF LOUVAIN

(Louvain, Belgium)

Location: The three campuses form a triangle connecting the town of Leuven (Louvain), the new community at Louvain-la-Neuve near Ottignies, and Louvain-en-Woluwe, a suburb of Brussels. Each campus is approximately 18 miles from each of the other two.

Description: Divided by a dispute over language in the late 1960s, the Katholieke Universiteit te Leuven (KUL) and the Université de Louvain (UCL) each enroll over 20,000 undergraduate and graduate students. Five thousand of those enrolled at UCL study at the facility at Woluwe, which includes the faculty of medicine and several graduate research institutes in science and business.

Information: KU Leuven
22 Naamsestraat
B-3000, Leuven
Belgium
(16) 28 40 24

UCL Service des relations extérieures
Place de l'université, 1
B-1348 Louvain-la-Neuve
Belgium
(10) 47 81 01

UCL-in-Woluwe: (02) 764 41 28

Visiting: For information on guided tours, call the telephone numbers listed above.

The university was established on December 9, 1425, when Duke John IV of Brabant, with the support of the local magistrate, secured a papal bull from Pope Martin V to open a *studium generale* to train doctors, men of law, and eventually, theologians. A joint effort of the Church, the ducal authority, and the local officials, the university was intended to help unify the Belgian provinces. Scholars from the Low Countries would no longer have to study at Paris or Cologne. The university first opened with four faculties: arts (humanities), canon law, civil law, and medicine. The faculty of theology was added in 1432.

The growth of the university was slowed during the fifteenth century by plagues, economic hard times, and the instability caused by the warfare between the Hapsburgs and the Burgundians. However, the first half of the sixteenth century was a period of prosperity and glory for Louvain, with its theological quarrels with the ideas of Martin Luther. Desiderius Erasmus of Rotterdam (best known as the author of *Praise of Folly*) was on the faculty from 1517 to 1521 and dominated the side of the humanists, seeming to thrive on the controversy of his time. He once wrote to a friend about Louvain: "Its climate is not only agreeable, but also healthy; a man can study in peace and quiet, and no other university can rival its intellectual life, or the numbers and quality of its academic staff."

That Erasmus could have found peace and quiet at Louvain is a mystery in that he was frequently attacked by his conservative colleagues. When opposition from the faculty threatened the funding of his College of the Three Languages, Erasmus decided to establish a separate institute independent of the university. He set about recruiting teachers who would instruct theologians in Latin, Greek, and Hebrew as part of a liberal Catholic education, which would allow for more open interpretation of the scriptures. His critics regarded this idea as a threat to orthodox teaching and as an open invitation to heresy. Arguing that only the Vulgate, the Latin translation of the Bible, could be a source of dogma, they attacked his proposal for an original language edition of the New Testament as sacrilegious. Erasmus sought to make theology more critical by referring to original texts. He criticized the emphasis on ecclesiastical practices and advocated a return to a morality based on the gospels. While he reproached Luther for the sharpness of his style, he was open to at least some of Luther's ideas. When he refused to succumb to pressure to denounce Luther publicly, he was accused of collaborating with him. The university condemned Luther in 1519, and as his position as an independent reformer became more and more untenable, Erasmus felt obliged to leave Louvain for Basel, Switzerland, in 1521.

In a country whose population is divided along linguistic lines (Flemish in the north, French in the south, and bilingualism in the capital city of Brussels), it is not at all surprising that Belgium's oldest and largest university found it necessary to divide itself in the same way. The language dispute can be traced to the fifth century, when some Frankish tribes held onto their Germanic origins, while others were influenced by the Roman traditions and the Latin language. Religion, too, played an important role in the history of Catholic Belgium, whose citizens never felt comfortable with either the Protestantism of the Dutch or the anticlericalism of the French Revolution. The University of Louvain is a testament to the influence of religion and language on intellectual thought.

Erasmus was not the only thinker to meet with resistance at Louvain. Some of the university's most illustrious faculty suffered a similar fate. Gerardus Mercator, the renowned cartographer, a student and later a professor of geography, was driven out of the country in 1544. He and Andreas Vesalius, who modernized the study of human anatomy, taught side by side with classicists. Most of the teaching at Louvain during the sixteenth century was devoted to the study of antiquity and opposed to the idea of making knowledge accessible to the lower classes. Convinced that educating the masses would undermine the authority of the princes and the clergy, the university continued to perpetuate an intellectual elite. One of Louvain's most famous history professors, Justus Lipsius, dedicated himself to studying Seneca and Tacitus and to publishing editions of those writers and other classical figures.

During the Reformation, the great questions of the age had to do with free will versus predestination, the meaning of original sin, and the infallibility of the pope. The theologians at Louvain clung steadfastly to the ideas of Aristotle and Thomas Aquinas. Their contributions to this period included the creation of an index of censored books that became a model for the Catholic Church's Index of Forbidden Books, and the publication of a new Latin translation of the Bible, the "Louvain Bible" of 1547.

By the end of the sixteenth century, Belgium's population decreased as Calvinists emigrated rather than face the policies and practices of Philip II of Spain, who ruled the region and sought to wipe out opposition to Catholicism. As commerce slowed, Louvain's population went from 20,000 to 9,000; with the university no longer enjoying its former prestige, intellectual decay set in. Part of the problem stemmed from the reorganization of the bishoprics, whereby Louvain became part of the diocese of Mechelen (Malines) instead of Liège. In addition, it now had to compete against universities at Douai (under the Spanish Netherlands) and Leiden (a Calvinist university established to oppose Spanish Catholicism). When economic and political troubles occurred at the end of the century, the university at Louvain encountered difficulties in meeting professors' stipends. Following an attack on the town in 1572 by the Calvinist William the Silent, leading a revolt against the Spanish rulers, a garrison was sent to keep order. However, when the soldiers were not paid, they turned to vandalism. Furthermore, the plague of 1578 claimed the lives of many faculty members. Fewer and fewer students came to Louvain during these years.

A period of relative tranquillity followed the appointment of the Hapsburg archduke Albert of Austria as governor of the Low Countries. Shortly after his death, however, Louvain became embroiled in a dispute between the Spanish Netherlands and Louis XIII of France and Frederick Henry of Orange. In 1635 the

townspeople and the students joined forces to take up arms against the Spanish governor.

The seventeenth and eighteenth centuries produced only mediocre scholarship. The leaders of the university officially rejected the Cartesian philosophy which had caught on in France in favor of the more traditional Aristotelian philosophy in 1652.

During the eighteenth century Austrian authorities sought to make reforms at Louvain in order to raise its standards. They withdrew the right of the university to appoint its own rector. After the French Revolution, control of Louvain alternated between France and Austria until 1797, when the university was closed after almost 400 years of existence. Many priests who had been teaching there refused to take the oath to the new French republic, and so were exiled. Students continued their studies in Brussels or in France.

In 1814 some of the former professors suggested reopening the university in its original form. The local authorities preferred a university based on the French model, and others opposed the idea of reopening the school altogether, citing Louvain's opposition to the Enlightenment. However, two years later, William I, king of the new union of Belgium and the Netherlands, established three state universities in the southern Low Countries: at Ghent, Liège, and Louvain. The university was officially reopened in 1817.

The liberals and the Catholics in the community did not like William's authoritarian government; many students joined the rebellion of 1830, part of a larger revolution ending the Belgium-Netherlands union and giving rise to the independent kingdom of Belgium. Disorder marked the next few years at Louvain. Some wanted a single state university for all of Belgium; others wished to retain only Ghent and Liège. In 1835, it was decided that only Ghent and Liège would be supported by the state. The bishops, who had established a Catholic university at Mechelen in 1834, took advantage of this opportunity to move their university to Louvain.

The new university was to continue the traditions of the old one, except that there were no ties to the state, as provided by Belgium's new constitution. Funds came from tuition and charitable contributions. Discipline was rigorous, and professional training was more important than scholarship. While French replaced Latin as the language of instruction, there were classes in Flemish language and literature that were not offered at other Belgian universities.

Some students, believing that Louvain had become too conservative, transferred to Brussels. Some conservatives on the staff felt that the administration was too liberal, and they sought positions at other universities. Internal struggles continued through the next few decades, with the conservatives gaining many concessions, such as the power to appoint faculty and to oversee lectures.

A new law in 1876 allowing the university to create its own examination encouraged experimentation in science courses. New schools opened in engineering and agronomy with the intent of improving Belgium's agricultural economy and preserving Catholicism among the peasants and industrial workers. As the student body began to come from the middle classes, student life became more relaxed. The university's need to expand to meet the needs of its growing population often resulted in financial strain.

Toward the end of the century, there was less emphasis on teaching and more on scholarly research. Study groups formed in theology and humanities classes, and student organizations began to develop. One group which called for promoting the Flemish language encountered resistance from the Walloon (French-speaking) students. Nevertheless, more courses were offered in Flemish and more documents were published in both languages as a result.

By 1900 more capital was found to resolve some of the university's financial difficulties and to build new facilities. New institutes were set up in bacteriology, pathology, and geology. Petitions for duplication of courses in both languages, however, were denied on financial grounds. This increased the tension between the two groups. Finally in 1911 more classes were added in Flemish, along with new courses in art history, dentistry, and banking.

When the Germans invaded Louvain in 1914, about one-third of the existing buildings were burned down. The university was forced to close for the duration of the war, since many of its professors had left to teach abroad, and the administration did not want to give in to German censorship. Professors who remained in Louvain busied themselves with research or with looking for books to replace those lost when the library was burned. When the university opened once again in 1919, Belgian bishops sent out an international appeal to rebuild the library. The Treaty of Versailles stipulated that the Germans had to compensate Louvain for any lost treasures.

As funds were secured from the bishops' appeals and from Belgian and American citizens, the university began to rebuild. More students matriculated than ever before, and women were accepted as students for the first time in 1920. Under pressure from Flemish groups, the duplication of classes in two languages was increased. Until 1923, Louvain was the only Belgian university which had classes taught in both Flemish and French. Nevertheless, tensions between the two groups over the language question continued to mount. When the administration tried to suppress the militant groups, the Flemings rebelled by boycotting the 500th anniversary celebration in 1927. By 1932, almost all classes were taught in Flemish as well as in French.

The town of Louvain had to be evacuated in May 1940 when Belgium was invaded by the Germans a second time. Once again fire destroyed many of the buildings,

including the rebuilt library. The rector reopened classes at the university in July, but the community suffered many problems during the occupation. There was a large increase in enrollment because the University of Brussels closed in 1941 and because many young people preferred to register for classes rather than submit to forced labor under the Germans. The increase in the number of students from 4,600 at the start of the war to 7,700 by 1943 put a strain on the university's resources.

Students had to work under uncomfortably crowded conditions and endure shortages of materials, food, and heat. When the rector refused to release the first-year students to work in the German factories, he was arrested and sent to prison, although the sentence was soon commuted to house arrest. The vice-rector set up clandestine lectures and examinations for students who were not allowed to register officially. When the town was repeatedly hit by Allied bombs in 1944, many of the university's buildings were destroyed and some of the students and faculty killed. More damage was done as the Germans retreated, making it necessary for the town and the university to go about the task of rebuilding once again.

After the war, the university responded to the increased social needs of the students by assigning advisors and counselors to give them guidance. Academically, new institutes were set up in archaeology, art history, African studies, and other disciplines. In 1954 funds were allocated to establish a sister center of learning, Lovanium University, in the Belgian Congo in order to meet the needs of African students.

The language issue came to a head again in the 1960s. Despite the duplication of courses and the hiring of Flemish faculty, the administration continued to hold its meetings in French, and French culture prevailed. When, in 1960, the number of Flemings outnumbered the Walloons, the Flemish students and professors began to press for more autonomy. While some were willing to accept bilingual status for Louvain on the model of Brussels, the majority felt that this solution was unacceptable, since Louvain was in Flemish territory. The Francophone professors, on the other hand, wanted their children to learn French in school.

When the issue could not be resolved by dividing the university into two separate sections under separate deans, pressure mounted to transfer the French section to Wallonia, the French-speaking part of Belgium. The medical school had already moved its facility to Woluwe-Saint-Lambert, a suburb of Brussels, in 1965. Proponents of the move argued that Louvain was much too small a town to accommodate the increasingly large student body. Opponents feared that Louvain would lose its status as a world-class university. The debate divided students, faculty, bishops, and eventually the Christian Social party. In 1968 a plan was approved to separate the Katholieke Universiteit te Leuven (KU Leuven), which was to remain in Louvain, from the Université Catholique de

Louvain (UCL), which was to be relocated in French-speaking territory 15 miles southwest of Louvain in Louvain-la-Neuve, a community to be built between Wavre and Ottignies. A law passed in May 1970 recognized the existence of two separate universities, and the first stone was laid at Louvain-la-Neuve in 1971.

The division had some advantages. The new university, while a Catholic institution, was led primarily by lay people who abandoned the former authoritarian policies in favor of a new open-mindedness. State subsidies were increased, allowing for the expansion of the facilities at KU Leuven and the building of a well-planned university community at UCL. Each section was able to serve over 16,000 students by 1975. On the negative side, the decision to divide the existing library in half by allocating books with even-numbered call letters to one facility and books with odd-numbered call letters to the other has devastated the historic collection.

During the 1970s, nine faculties moved to the new campus at Louvain-la-Neuve, including theology, law, philosophy, economics, and science. Built on a 2,300-acre parcel of land, the new city boasts residential, business, and university sections. Twenty percent of its students come from over 100 foreign countries, many of them on scholarships aimed at benefiting third world countries. Université Catholique de Louvain also has a commitment to continuing education, offering outreach programs for teachers, professional people, and senior citizens. A large science park allows for cooperation between university research and industrial applications, such as pharmaceutical and agricultural products and informational technology. The first two years of undergraduate education serve as an introduction to the basic academic subjects from which the student chooses an area of specialization. Students who fail are provided assistance in choosing an alternative program of study. Clearly, the university's mission has moved forward from the perpetuation of an elite toward the education of a diverse student body.

The rural location of Louvain-la-Neuve has afforded the campus the space to create a large sports complex, an experimental theater, a museum, and the Bois de Lauzelle, a forested park ideally suited for nature walks. It is not surprising that this well-planned and well-maintained community has become one of Belgium's most popular tourist attractions.

Louvain-en-Woluwe, located on the outskirts of Brussels, has benefited as much from its proximity to the city as Louvain-la-Neuve has from its location in the country. Its hospitals and clinics serve a vast community, providing relief to the sick and education to those pursuing

careers in medicine, dentistry, pharmacy, and public health. Its many institutes provide research in cancer, bioethics, cellular pathology, and organ transplants. Administratively part of the UCL, it has its own science park and its own partnerships with companies involved in medical research. Visitors to UCL in Woluwe can visit the Garden of Medicinal Plants, with its systematic classification of plants, or try their mountaineering skills on the climbing wall next to the sports center.

Katholieke Universiteit te Leuven has not been idle since 1970. It, too, has expanded its facilities and services. The human sciences section surrounds the heart of the city of Louvain, while the biomedical sciences occupy the west side of the city near St. Peter's and St. Raphael's hospitals. Katholieke Universiteit te Leuven has the added advantage of being surrounded by nearly six centuries of European history. Its many student cafés and its dynamic cultural life add to the charm of this old university town.

All three campuses of the University of Louvain can boast of the unique geographical position of Louvain within Europe. Brussels, the center of NATO and of the European Economic Community, has become Europe's unofficial capital. Its international spirit and cosmopolitan character have influenced the new University of Louvain: humanistic, practical, and accessible to all who wish to learn.

Further Reading: *The University of Louvain 1425–1975* by R. Aubert, A. d'Haenens et al. (Louvain: Leuven University Press, 1975) is a complete, balanced, and beautifully illustrated history of the university from its beginnings through the years of separation written on the occasion of its 550th anniversary. It gives a detailed account of its most famous students and faculty and of the movements that shaped its history. *Belgium: The Making of a Nation* by H. Vander Linden, translated by Sybil Jane (Oxford: Clarendon Press, 1920) is a valuable, if generalized, history of Belgium. Linden examines the social, economic, religious, and political movements that helped to shape modern Belgium. *Erasmus: His Life, Works, and Influence*, by Cornelis Augustin, translated by J.C. Grayson (Toronto: Toronto University Press, 1991), is an in-depth study of the life and writings of Erasmus and of the criticism of his contemporaries. Flora Lewis's *Europe, a Tapestry of Nations* (New York: Simon and Schuster, 1987) gives an excellent overview of the Belgian language dispute in the chapter entitled "Belgium: Divided by Language."

—Sherry Crane LaRue

UNIVERSITY OF MANCHESTER

(Manchester, England)

- Location:** About one mile from the city center, on Oxford Road. Manchester is about 180 miles north of London and 210 miles south of Edinburgh, Scotland.
- Description:** The oldest and largest of England's civic universities, with nearly 16,000 full-time undergraduate students and 4,000 postgraduate students.
- Information:** Registrar's Department
The University of Manchester
Oxford Road
Manchester M13 9PL
England
(161) 275 2113
Fax (161) 275 2209
- Visiting:** Call the Communications Office at the telephone number above.

The city of Manchester, England, was settled by the Romans in A.D. 79. They called it *Mamucium* (city of tents) and remained there for over 300 years. In 1359, Manchester became a market town, to which people flocked on market days to buy and sell. In the sixteenth century, Manchester saw the beginnings of a prosperous textile industry, and by the late eighteenth century, Manchester was the largest textile producer in the world, with the mills powered by the vast quantity of coal, which was both nearby and abundant. Located in the heart of Britain, on the River Irwell, lying almost exactly between London and Edinburgh, and accessible to the port of Liverpool, Manchester grew to be the central city in Britain's Industrial Revolution and a powerful international center as well.

One of Manchester's many prosperous merchants, John Owens, who died in 1845, left £96,000 for the founding of a college. Owens's will stated that the purpose of this endowment was "providing or aiding the means of instructing and improving young persons of the male sex (and being of age not less than 14 years) in such branches of learning and science as are now, and may be hereafter, usually taught in the English universities." Owens also wanted to found a school that was free from denominational tests and subscriptions. The only other institution based on similar foundations was University College in London. At its foundation in 1851, the institution was named Owens College.

The original college was located in the former residence of Manchester reformer and economist Richard Cobden on Quay Street. It had 62 students and 5 professors, with A.J. Scott as the principal. Owens College established its first scholarships, the Victoria Scholarship and the Wellington Scholarship, in 1852.

A library was established in the same year as the college, 1851. Just over 120 years later, in 1972, the university library joined with the John Rylands Library. The Rylands Library, established by the third wife of another wealthy Manchester merchant, John Rylands, brought with it an impressive collection of incunabula, Oriental manuscripts, papers of the famous critic John Ruskin, and material related to the pre-Raphaelites. The library presently contains almost 4 million volumes as well as important collections related to railways, private presses, and the Quakers.

One of the early courses offered at the college was geology. In 1851, the paleobotanist W.C. Williamson was appointed to teach it. In its first 100 years, the department of geology focused on the study of stratigraphy and paleontology. In the 1950s, England's first laboratories for the study of experimental petrology were opened at the university. Another first was the establishment of the first chair in organic chemistry in 1874; it was occupied by Professor W. Boyd Dawkins.

While the school did not fare well financially at first, it began to prosper in the 1860s. In 1870 the entrance age for students was raised to 16. In 1872, the much older Manchester School of Medicine (founded in 1824) merged with Owens College. By 1873, the college had outgrown its Quay Street facility and moved to new buildings on its present main site, on Oxford Road. The principal building, designed by Victorian architect Alfred Waterhouse, is still in use today.

In 1874, women were first allowed to attend special lectures specifically designed for them, but they were not permitted to attend classes with men. A vote to allow women was brought before the governors in 1877, but it was denied. The College of Women, which opened nearby that same year, was taken over by the university in 1883.

In 1880, the Victoria University was created under a federal constitution. Owens College was incorporated into this university, but it was still called Owens College, as one of the entities of the university. The other two colleges were the University College of Liverpool and the Yorkshire College at Leeds; both schools later became independent.

In 1903, when the university received a new charter, it was renamed Victoria University of Manchester. It became the first civic university in England, followed by



University of Manchester

schools in Birmingham, Leeds, and Liverpool. After the 1903 charter was granted, businesspeople and local authorities in Manchester became very interested in the school and began to make grants and private donations. The philosophy of the university in the early 1900s was to meet the needs of the community. With this eye toward practicality, in 1904 Manchester became the first British university to offer degrees in pharmacy. It also became one of the first institutions to grant a degree in commercial services. Much later, in 1965, the Manchester Business School was founded.

In 1905, the Faculty of Technology was incorporated into the Victoria University of Manchester. Originally developed in 1824 under the protection of the city of Manchester, this institution, now called the University of Manchester Institute of Science and Technology (UMIST), is financially and constitutionally independent from the Victoria University of Manchester, but it is academically fully integrated with the university. Though UMIST operates under a separate charter, first granted in 1956, with a supplemental charter in 1987, students who graduate from UMIST receive degrees from the University of Manchester. Some of the courses offered at UMIST include astrophysics, chemical engineering, total technology, and civil and structural engineering.

Several renowned scientific achievements have taken place at the University of Manchester. Probably the most notable of these achievements is that of Sir Ernest Rutherford, whose area of concentration was the nature of matter, and specifically, while he was at the University of Manchester, the atom and its radiations. He came to England from his native New Zealand and studied at Cambridge University's Cavendish Laboratory, where he investigated electricity and radioactivity. He took over the chair of physics at the University of Manchester in 1907 on the invitation of his predecessor, Arthur Schuster, himself a well-known researcher in the area of optics, the author of *The Theory of Optics*, and one of the first men to take x-ray photographs in England.

Rutherford won the Nobel Prize for chemistry in 1908 for his studies of radioactivity. In 1909, his studies of alpha particles and radiation led to his theory of atomic structure. He later said of the experiment, "It was almost as incredible as if you fired a 15-inch shell at a piece of tissue paper and it came back and hit you." In 1919, while at the university, he created the first artificially induced nuclear reaction. (In his honor, the rutherford, a unit of radioactivity, was named for him.) Rutherford had several accomplished assistants in his laboratory, including Georg von Hevesy, who won the Nobel Prize for chemistry in 1943 and Hans Geiger, who later developed the Geiger counter.

The university is also home to some of the world's most important astronomical research facilities. The research of Sir Alfred Charles Bernard Lovell, who was on the staff of the university, led to the construction of

the Nuffield Radio Astronomy Laboratories, which are part of the university's department of physics and astronomy. The Jodrell Bank Experimental Station, as Nuffield is also called, was founded in 1945 and is located in Cheshire. It housed a steerable radio telescope which was the world's largest steerable parabolic dish until 1971. In 1951, Lovell became the professor of radio astronomy and director of Jodrell Bank. The laboratories now focus on the study of radio sources and the detection of neutral hydrogen in Earth's galaxy and external galaxies.

Also remarkable was the invention of the Manchester Mark 1 or MADM computer. This, the world's first stored program computer, was developed in the late 1940s by F.C. Williams, who took a chair in electrotechnics at the university in 1947; a colleague also involved in the project was Maxwell Newman, who was professor of pure mathematics. By 1949 the MADM was solving mathematical problems. In 1951, the team of computer pioneers at Manchester built an improved version and called it the Mark II, or MEG.

A direct result of the work of these men was the formation in 1964 of the university's department of computer science, the first computer department in a United Kingdom university. Its first class had 11 faculty and 20 students. By 1995, the department had 168 staff and 637 full-time students. It is the largest computer department in the United Kingdom.

By 1995, the University of Manchester was one of the largest unitary, noncollegiate universities in England, with more than 16,000 full-time undergraduate students and 4,000 postgraduates and a faculty of about 1,200. The school has nine faculties: arts, education, law, medicine, theology, science, economic and social studies, business administration, and technology. Within these faculties there are over 70 departments.

The campus covers 280 acres in Manchester, and has branches in other locations as well. Manchester University is home to the Manchester Museum, the University Theater, where the Contact Theatre Company performs, and to the Whitworth Art Gallery. The gallery holds renowned permanent collections of English watercolors, textiles, and wallpapers.

Further Reading: There is an informative article on the early days of the University of Manchester in *A Cyclopaedia of Education*, edited by Paul Monroe (New York: Macmillan, 1913; republished by Gale Research Company [Detroit, Michigan], 1968). Edward Neville da Costa Andrade's *Rutherford and the Nature of the Atom* (Garden City, New York: Doubleday, 1964) explores the life and career of Sir Ernest Rutherford and includes information on colleagues and other important scientists of the period.

UNIVERSITY OF MELBOURNE

(Parkville, Australia)

Location:	The campus covers territory in two Melbourne suburbs, Parkville and Carlton.
Description:	A public university enrolling approximately 28,000 students in undergraduate, graduate, and professional schools.
Information:	Course and Careers Unit P.O. Box 4048 University of Melbourne Melbourne, Victoria 3052 Australia (3) 9344 6543

When the foundation stone of the University of Melbourne was laid on July 3, 1854, it was so well concealed that it was never seen again. Although the stone holds no inscription, records indicate a copper plate underneath it reads in Latin, "This is the first stone of the University of Melbourne, instituted in honour of God for establishing young men in philosophy, literature and piety, cultivating the talent of youth, fostering the arts, extending the bounds of science." The lost inscription also names 23 men who were considered influential in the university's founding.

Some citizens of Melbourne had become determined to establish a university after Australia's first university opened in Sydney in 1852. One of the founding fathers was Sir Redmond Barry, ■ Supreme Court judge and graduate of Trinity College, Dublin, who was appointed the university's first chancellor. On April 13, 1855, during the University of Melbourne's opening ceremony, Barry told the crowd that he hoped that the university would become "the nursing mother and generous instructress of a race of distinguished scholars."

The university's true founder was Hugh Culling Eardley Childers, who arrived in Melbourne in 1850 at the age of 23 and served as vice chancellor during the university's early days. He had studied at Oxford and was a Cambridge graduate. Although Parliament rejected his idea for a unified system of education, his experience as the inspector of denominational schools in Australia earned him an appointment as auditor-general and as an official nominee on the Legislative Council.

In November 1852, Charles La Trobe, the lieutenant governor of Victoria, voted £10,000 for the establishment of a university for Melbourne. On January 22, 1853, the bill for establishment of the university was given royal

assent. By February 1853 a bill had passed through Legislative Council which granted £20,000 annually for university buildings and another £9,000 annually for university expenses. The legislation specified that the university be "open to all classes and denominations of Her Majesty's subjects" and that "no religious test shall be administered to any person" before he became a student or office holder.

Childers authored the original draft of the bill for the university's establishment. The draft has since become one of the institution's most prized possessions. Childers later became Chancellor of the Exchequer in England.

Although the University of Melbourne is now considered a distinguished school by many scholars, it had very humble beginnings, which, ironically coincided with a period of prosperity for the country. On the minds of many individuals in the mid-1800s was the greed for gold. Furthermore, most of these people wanted to find gold and return to Europe with their fortunes. Gold fields were found within 100 miles of Melbourne, which helped to boost the city's population to 25,000 during the 1850s. Author W.H. Newnham would reflect years later that, "it is strange that though the university was built on the optimism and prosperity that came with the discovery of gold, those who made fortunes out of gold contributed practically nothing at all to its development."

The university's chosen site was in Carlton, ■ suburb of Melbourne. Professors had to travel toward town to the Carlton Hotel to pick up mail at the nearest carrier drop. Not until the late 1850s did Carlton become more populated. The site was bordered by Grattan and Swanston streets, Royal Parade and College Crescent. This area in 1852 was a rubbish dump split by ■ gully running north and south. Edward La Trobe Bateman was given the job of landscaping the area. There was much work ahead for ■ team of ex-convicts who lived on porridge, tea, and bread, and worked 12-hour days to improve the rubbish-filled swampland. Bateman's laborers brought in good soil, planted grass and greenery, and dammed the gully to form a lake.

Redmond Barry organized ■ competition for the design of the university's first buildings. Francis White, an architect from London won the contest with a design for a stone quadrangle with cloisters and a Tudor ornamental front. One of White's buildings was for the law school, which was raised in the middle of a paddock in 1855.

On the university's opening day, lectures began in the original Exhibition Building on William Street, since the university was still under construction. Only 16 students enrolled. The low attendance was attributed to the dearth

of young men in Melbourne interested in noncommercial activities. In fact, the local newspaper, *The Age*, called the university a costly toy, "the very insanity of extravagance." *The Age* editorialized that it was ridiculous to spend a large sum of money to teach classics in a country that needed scientists, engineers, and geologists to develop harbors and unearth the minerals in the country's heartland. *The Age* also suggested that the prospective students would be better to attend Oxford and Cambridge—universities which cost only half as much to attend. *The Age* editorial writer commented, "For one-half the money the boy could be sent to Oxford or Cambridge, and maintained there in a sumptuous style."

Six months into the university's opening year, 5 of the 16 students had dropped out. The low student numbers may be attributed to the unsatisfactory state of secondary education in Melbourne. Many undergraduates found they did not possess the needed skills. In its 1859–60 reports, the University Council criticized the "inaccuracy of the training of all the young men who have hitherto come up." First-year students, said the report, "have so much to learn at the University, which should have been done at school."

In its first two decades, the University of Melbourne was one of the most secular universities among those in the British Empire. By being so, Melbourne's university removed itself from religious controversies. Of the 100 acres granted for university grounds in Carlton, a suburb of Melbourne, 40 acres were reserved for boarding colleges to be built by Protestant and Catholic denominations. These institutions, it was felt, ensured that young men would not lose track of the religious foundations of society. The state of Victoria considered all Christian denominations as equal and therefore decided to withhold the influence of any and all religious denominations. The university was allowed only four clergymen on its 20-member council staff. In addition, the council agreed that professors must not be clergymen. At least three of the first six professors were sons of clergymen. Even as late as 1910 the university defended itself as a secular university when the council rejected a motion for the university to confer degrees in divinity.

The University Council decided that the following subjects would be taught at Melbourne: mathematics, classical languages, natural sciences, and moral sciences. The selection of professors was done by a London committee which had also selected professors for Sydney's institution. Four professors from the United Kingdom were selected. Professor of mathematics, W.P. Wilson, professor of the natural sciences, Frederick McCoy; and W.E. Hearn, professor of modern history and literature and political economy, all came from Queen's University of Ireland. Henry E. Rowe came from Trinity College, Cambridge, to chair the classics and ancient history department. Unfortunately Rowe never had the opportunity to teach at Melbourne. After making the long sea

voyage from Plymouth, England, he was so seasick that he died five weeks after reaching Australia.

The attraction for the professors in part was the salary—at least four times more than they were paid in the United Kingdom. Although the annual tuition was only £12, it was too high for the poor colonists who could not afford to send their sons to preparatory or secondary schools, while at the same time meeting their other expenses. To meet the needs of the poorer students, the council offered two £50 scholarships to the best students at the matriculation and the first and second year examinations. The best students at the final exams were also awarded two-year £100 scholarships. These scholarships were intended to enable students to study for a master of arts degree. However, since there were no free secondary schools, it would be 1865 before a workingman's son enrolled—the son of a quartz miner. Most of the students were sons of wealthy Melbourne businessmen: doctors, judges, government officials, or tradesmen. These students were taught from a broad curriculum—Greek and Latin for two years and geometry and "the Elements of Natural Philosophy and Astronomy" for one year. Other subjects included mathematics, history, political economy, science, and logic.

The university began offering a law course in 1857, mostly to defend itself from harsh criticism that the education provided was not useful. The two-year law course was composed of evening lectures given three times a week. Students who passed were entitled to practice as barristers and solicitors in the colony. During the first year of the law course offering, 39 students enrolled. The total number of students increased to 45 in 1858, and reached 110 by 1861. That year, architecture, civil engineering, and surveying courses were added to the curriculum. In 1863 Professor George Halford inaugurated a five-year medical course which later made Melbourne world-famous.

In 1881, after much discussion and argument, Melbourne became the first Australian university to admit women. By the early 1900s the number of students was fewer than 1,000. From 1900 to 1940 enrollment increased to 5,000. Then after a decline during World War II, it rose to nearly 10,000 in 1948. In 1995 enrollment grew to its highest numbers ever, at over 30,000 students, with a teaching and research staff of approximately 5,000. The university has grown to 11 faculties and the School of Graduate Studies and the Melbourne Business School. Nine university residential colleges and three halls of residence are situated close to the campus.

The University of Melbourne has come a long way from its swampy start. The potpourri of architectural styles reflects 14 decades of the university's history: from the classical tranquility of the sandstone law cloisters and the older colleges to the modern lines of the Melbourne Business School. One of the original buildings is named after W. Baldwin Spencer, who established the school of biology. He was later known for his studies of the Aborigines. Built in 1887, the W. Baldwin

Spencer Building is spired and turreted. Today, it has ■ contrasting architectural backdrop—that of the tallest building on campus, the Redmond Barry Building. The university is dominated by tall and spacious buildings of the late twentieth century; there still exists, however, architecture dating from the institution's birth. Few drastic changes were made in the appearance of the university until after World War I. During the 20 years between the world wars, buildings were added, but with little logical planning. A master plan for the university's buildings and grounds was finally instituted in 1970. One of the interesting modern feats was the construction of the South Lawn over a car park. The car park earned a place in the *Australian Register of Historic Buildings*—the only car park to be listed.

At one end of the Law Quad lies Cussonia Court, named after the rare Cussonia tree which stands at its center. This tree replaced an old, diseased one. Another interesting tree on campus is called the Ginkgo biloba or maidenhair tree; examples are found outside the Faculty of Science Building on Masson Road. The trees on either side of the doors of the building are from one of the oldest known species of plant. The fossil remains of these trees have been discovered in Australia, dating back 250 million years. The species is unusual because one of the trees is male, the other female.

Perhaps John Bechervaise described the campus best when he wrote:

. . . though useful maps and aerial photographs are available, they cannot reveal cloisters and arcades, facades and sculptured plaques, enamels, and ceramic murals; all those inspired grace-notes which abound, in which one finds delight and subtle concepts of meanings and purposes.

During the institution's early years many scoffed at its motto, "I shall grow in the esteem of future generations." The foundation stone for the University of Melbourne may remain unfound, but the institution's influential educators and leaders will not be forgotten.

Further Reading: Geoffrey Blainey's *A Centenary History of the University of Melbourne* (Melbourne: Melbourne University Press, 1956) is ■ history of the early development of the university. The book also includes a number of rare old photographs. John Bechervaise's *The University of Melbourne: An Illustrated Perspective* (Melbourne: Melbourne University Press, 1985) includes photos of the newer buildings on campus. W.H. Newnham's *Melbourne's Biography of a City* (Melbourne: Cheshire, 1956; revised edition, Hill of Content, 1985) contains quirky tidbits about the university and its buildings. Also interesting is Michael Cannon's *Melbourne after the Gold Rush* (Main Ridge, Victoria: Loch Haven, 1993).

—Marla Bosworth

UNIVERSITY OF MICHIGAN

(Ann Arbor, Michigan, U.S.A.)

Location:	The main campus is in Ann Arbor, Michigan, about 35 miles due west of Detroit. Other campuses are in Dearborn and Flint, Michigan.
Description:	A public university that enrolls approximately 40,000 people in its undergraduate, graduate, and professional schools.
Information:	Office of Undergraduate Admissions 1220 Student Activities Building University of Michigan 515 E. Jefferson Ann Arbor, MI 48109-1316 U.S.A. (313) 764-7433

When the University of Michigan was established in 1817, Michigan was still part of the Northwest Territory on the western frontier of the United States. There were no more than 7,000 settlers in the region, most of whom were French fur traders. It was in this unlikely environment that Michigan Supreme Court Justice Augustus Woodward drafted a resolution to provide a public school system throughout Michigan. His plan was adopted on August 26, 1817, and that September Woodward attended the laying of the cornerstone of the first university building on Bates Street in Detroit.

Woodward's educational scheme was derived from progressive French examples; despite that, he pedantically titled the university, "Catholepistemiad, or University of Michigania." Woodward provided that the university was not to be governed or funded by a church, as was the norm at the time. Instead, the professors themselves were to manage the school, and the state was to finance it through taxation. Secondly, the university was to be the hub of a unified public education system. Woodward accorded the university president and professors the authority "to establish colleges, academies, schools, libraries, museums, athenaeums, botanic gardens, [and] laboratories" throughout Michigan. Thus, the university was cast from the start as a state institution intended to serve the public good. Finally, Woodward's curriculum emphasized science over classical studies, contrary to the programs at Harvard, Yale, and the other established schools in the East.

The university actually functioned only as a primary school and academy until 1837, the year that Michigan became the 26th state of the Union. John Pierce, who held the newly created post of the state superintendent of

schools, pressured the state legislators to fulfill their constitutional obligation to establish a proper university. The regents complied, and quickly decided to locate the university's main campus at Ann Arbor, on 40 acres of land donated by the city's residents. Eight more campuses were called for or established over the next nine years, but none long survived the transfer of all state funding to the central campus in 1846. The facilities at Ann Arbor emerged slowly; four professors' houses were built in 1840, and the next year the Main Building (later renamed Mason Hall) was erected.

In September 1851, the university enrolled its first students, all male: 6 freshmen, 1 sophomore, and 23 at the preparatory level. The atmosphere appears to have been more like a contemporary boarding school than a modern university. The students all lived in the capacious Main Building, and all followed a severe schedule that began with chapel service early each morning, and continued through the day with a rather more classical curriculum than Woodward envisioned. Their only free time was between dinner and 9 P.M., after which they were confined to the campus. The students at Ann Arbor in the 1840s played many boyish pranks as well. They built bonfires in the city streets, for example, piled hay in the chapel, and locked the dorm monitor in his quarters. Thus began an enduring tradition of mischief making at the university.

Much to the displeasure of the faculty, several fraternities established chapters at Michigan very early: Beta Theta Pi and Chi Psi in 1845, and Alpha Delta Phi in 1846. Their purpose was strictly social, in contrast with the literary societies they displaced, and the fraternities fostered the vices of drinking, smoking, and card playing, along with more wholesome activities. When the faculty tried to ban the fraternities in 1849, the townspeople of Ann Arbor defended the students, for they associated the Greek letter houses with their own secret societies, the Masons and Odd Fellows. The faculty eventually conceded to allow the fraternities on several conditions, most notably that each publish a list of its members.

Michigan evolved rapidly into a serious academic institution after 1852, when Henry Tappan began his tenure as the first of many extraordinarily competent presidents to reside over the university at Ann Arbor. A faculty quarrel forced Tappan out of a professorship in philosophy at New York University in 1837, and between then and his arrival at the University of Michigan, he published four books on philosophy and education. While the university had suspended its preparatory program, erected two new buildings, and founded a medical department before his arrival, Tappan had the vision to add a graduate program, and to



University of Michigan

change the university from a mere place of instruction into a serious research center. He eventually raised funds with which he founded the law school, increased the library's holdings, hired new faculty, built and stocked a chemical laboratory, and raised an astronomical observatory. Despite his successes, Tappan was forced out of office in June 1863, by a board of regents intent on taking back control of the university.

The Civil War erupted before Tappan's departure, with the Confederate attack on Fort Sumter on April 13, 1861. Tappan organized a rally at which he professed his unionist view to a public of divided opinion (an act that may have contributed to the regents' disapproval of him). A faction of inspired students immediately formed three companies and began drilling on the campus, and Tappan himself enlisted in a home guard unit for men over the age of 45. By the war's end, approximately 1,800 students and alumni of Michigan served in the Union Army; 290 died or were wounded.

Erastus Haven assumed the university's presidency mid-war, in 1863, and it fell upon him to guide the institution through the first several years of postwar expansion. In 1865–66, 1,205 students enrolled at Michigan, making it the country's largest university. Haven's term was a brief six years, but he oversaw the inauguration of the first teaching hospital in the country, the first instruction by seminar at an American university, and the guarantee of a state tax to fund the university continually. It was also during Haven's tenure that the first black men were admitted to Michigan, in 1868, with neither argument nor fanfare. Haven left in 1869 to take over as president of Northwestern University.

Henry Frieze, professor of Latin, served as president pro tem while the search continued for someone to fill the position permanently. Frieze's brief term was uneventful, except for two matters. First, the cornerstone was laid on the massive, classically styled, University Hall. The building housed offices, classrooms, a chapel, and an auditorium seating 3,000 people. Second, Frieze argued for and won the right for women to enroll at the university. Although several midwestern universities were already coeducational, former President Tappan had decided not to admit women, for he felt that serious scholarship was the business of men exclusively. A group of 13 women twice applied to the university in the 1850s, and the daughter of one of the professors attended classes without enrolling in the 1860s. However, it was not until January 1870 that the regents approved Frieze's proposal to admit women on an equal status with men. That fall, 33 women were admitted to study medicine, law, or literature.

James B. Angell accepted the presidency of the university in 1871, when he was just 42 years old. He remained 38 years, longer than any other president at Michigan. The university prospered during Angell's administration, largely as a result of his success in soliciting funds. In his first 20 years, the university's faculty increased from 38 to

more than 100 members, and the number of courses offered rose from 57 to 378. The school budget rose fourfold, and the enrollment topped 2,500, making Michigan once again the largest university in the United States. A new hospital, library, engineering building, and law building were all built during Angell's term, and he oversaw the introduction of many new programs of study, including dentistry, pharmacy, music, and nursing. Finally, Angell twice raised faculty salaries in order to more nearly approximate the standards of Harvard and Yale, and thus to retain fine professors often lured east by higher salaries.

A variety of extracurricular activities blossomed during Angell's term, including the first intercollegiate athletics, new fraternities and sororities, drama and music clubs, and several student publications. Coach Fielding Yost famously led the Michigan football team through several undefeated seasons in the early 1900s. There were a few incidents of disrespectful student behavior also, as was rather common at the Ann Arbor campus since its inception. In one instance, students rushed the evening performance of a traveling circus, only to find themselves in a rumble with its employees. Someone burned a side-show tent, and the fight was only broken up when firemen turned hoses on the rowdies.

Following Angell's retirement in 1909, the university elected Harry Hutchins, dean of the law school, acting president. Plans to replace Hutchins with a permanent appointee were stalled by the onset of World War I. While the nation debated whether to enter the war, the students at Ann Arbor rushed into military training. The regents accepted a War Department proposal to form Reserve Officer Training Corps (ROTC) units on campus, and the first naval militia at an American university was comprised of about 55 Michigan men. All told, approximately 12,750 students, faculty, and alumni from the university served in the Army and Navy. Notably, Lieutenant Joseph Hayden, on leave from his professorship at Michigan, fired the last big cannon used in the war, at 11:00 A.M. November 11, 1918.

The two presidents to succeed Hutchins served only nine years combined. Marion Burton died in 1925, when he was just 50 years old, and having served only five years in office. In 1935, he was memorialized by the Burton Tower, for he is credited with having reinvigorated Michigan's research programs. Burton arranged financial partnerships with wealthy industrialists eager to tap the university's research capabilities, and he backed research sabbaticals and expeditions to such distant locations as Africa, Egypt, and the South Pacific. President Clarence Little lasted just four short years in the age of flappers and hip-flasks. He offended too many people with his outspoken, liberal views on birth control and euthanasia, and by favoring a compulsory course of classical study for freshmen and sophomores, contrary to the wishes of both students and faculty. Rather than battle the population he was elected to serve, Little resigned in 1929.

The university entered the Great Depression under the adept guidance of Alexander G. Ruthven. Because it was a state university, Michigan suffered the effects of the Depression more severely than its private rivals. The state legislature cut the university's funding by 15 percent in 1931, and faculty and staff salaries were consequently reduced. In 1933, further budget cuts forced the closing of 66 teaching and 26 nonteaching positions, and the remaining employees at Michigan suffered a second salary reduction. Then in 1935, the state legislature eliminated the mill tax by which the university had theretofore been funded. Ruthven effectively implored the state legislators to write the principle of the mill tax into their new plan, and thus he prevented the university's probable fall to mediocrity.

The university had not yet fully recovered from the drain of the Depression when the outbreak of World War II thrust Michigan into a new phase of development. With Ruthven still in charge, the university assumed an aggressive role in the United States' war effort. Michigan acquired 31 research contracts with the federal government, and yielded several important products. Three of the university's professors were involved in the development of the V-T fuse, a device that causes a bomb or missile to explode shortly before reaching its target, thus making it more destructive. Professor William Dow and colleagues in the engineering department invented the "Tuba," a radar jamming device, and Professor Werner Bachman of the chemistry department found a method for mass-producing what was then the most powerful explosive known, RDX. In addition, the university's ROTC programs were expanded, and most of the fraternities were converted to soldiers' accommodations. Approximately 32,000 people schooled at the university served in the armed forces, 520 of whom were killed in action.

The university went through several changes after the war. Enrollment jumped 25 percent, largely due to an influx of veterans. In response, the board of regents initiated an \$8 million building program that produced several dormitories, the Business Administration building, the Women's Hospital, the chemistry building, and more. A more abstract change concerned the students' growing expectation that they had a right to influence administrative decisions at Michigan. The rapid inflation that followed the nation's return to a peacetime economy had forced the university to raise tuition and fees substantially, and to double the percentage of the school's operating budget that tuition fees covered. Thus, the students came to see it as their right to influence the decisions that affected them on campus, as reflected in their new practice of evaluating the faculty of the Literary College, for example.

The 1950s and early 1960s were a time of relative prosperity for Michigan, ably guided by President Harlan Hatcher from 1951 until 1968. In 1956, the Kresge Foundation donated \$3 million for a new medical research facility, and the Ford Motor Company donated \$6.5 mil-

lion, along with the former estate of Henry Ford, where the university's Dearborn campus is now located. Hatcher solicited federal research grants worth millions of dollars each year at a time when many academicians argued against accepting task-specific grants, and when students were just beginning to protest the use of university facilities for military research. The scientific benefits of Hatcher's controversial policies are undeniable: Dr. Jonas Salk's polio vaccine was tested at the university's Survey Research Center, Dr. Robert Pidd of the physics department worked on the Phoenix Project to convert nuclear energy into electricity for the first time, and Professor Donald Glaser won the Nobel Prize for his invention of the bubble chamber, which produces a visible path of ionized matter in the trail of fast-moving subatomic particles.

Not humbled by such achievements, the students (and some faculty) at Michigan grew increasingly irreverent and rebellious. The students' impious ways and acts were by turns silly and serious. In 1952, Michigan's men staged the first "panty raid," later imitated at universities across the country. The casual beatnik aesthetic gripped the campus in the 1950s, and the Young Progressives flouted numerous university policies in their varied protests against the Korean War. In the 1960s, tension and impiety grew more severe, as protests erupted over various issues such as the war in Vietnam, military research conducted on campus, and the university's poor record in admitting and graduating minorities. The administration deflated most potential conflicts of the era through compromise and tolerance. They took no action against 37 students and professors arrested for occupying the draft board office of Ann Arbor, for example, and they withdrew the university from the controversial Institute for Defense Analysis. When the Black Action Movement (BAM) called a strike that successfully shut down large sectors of the university, the administration conceded to the principal demands of the group: minority aid, services, and numbers of staff devoted to their allocation were all increased.

Financial difficulties in the 1970s had an adverse effect on Michigan. President Robben Fleming, who took office in the fall of 1968 and left ten years later, was unable to protect the university's funding from harsh statewide budget cuts. Michigan suffered through several years of a hiring freeze and salary cuts while the nation experienced rapid inflation. The losses impacted severely on the university's quality of research and education. In 1966, Michigan had been ranked fourth in the nation. In 1975, it fell to 19th, and by 1980 it was 35th. Between 1971 and 1980, tuition nearly tripled for Michigan residents, and more than doubled for out-of-state students. Michigan's historic role as a state-funded university devoted to the public good was seriously compromised, probably forever.

Michigan's two most recent presidents have attempted to restore the university to its previous glory, but the full effects of their actions have not yet been realized. Harold

Shapiro rose through a series of administrative positions at Michigan to the presidency, which he assumed in 1980. He immediately embarked on a plan to streamline the university and recoup its standing by maintaining a smaller but better-paid faculty working in upgraded facilities. To guarantee Michigan's capacity for seminal research, Shapiro allocated more than \$80 million for building projects and renovations, including a new hospital opened in 1986, a revitalized medical campus, new chemistry laboratories, and a \$2.3 million renovation to Tappan Hall. Like Shapiro, James J. Duderstadt was a Michigan administrator and professor before he assumed the presidency in 1988. He espoused high ambitions for Michigan, which enrolled more than 36,000 students per

year. His early goals included: the hiring of more women, increasing Michigan's endowment to \$2 billion, upgrading the school's facilities, and restoring pride in the University of Michigan.

Further Reading: *The Making of The University of Michigan, 1817–1992*, by Howard H. Peckham, edited and updated by Margaret Steneck and Nicholas Steneck (Ann Arbor: University of Michigan, 1994) is an extremely thorough book that will bring the reader up to date on the university's history.

—Warren D. Rees

UNIVERSITY OF MINNESOTA

(Minneapolis and St. Paul, Minnesota, U.S.A.)

Location: Main campus in Minneapolis and St. Paul, Minnesota. Other campuses in Duluth, Morris, and Crookston, Minnesota.

Description: A state university enrolling a total of approximately 52,000; 38,000 on its Minneapolis/St. Paul campus.

Information: Office of Admissions
University of Minnesota, Twin Cities
240 Williamson Hall
231 Pillsbury Drive S.E.
Minneapolis, MN 55405-0213
U.S.A.
(612) 625-5000

Visiting: Phone VISITLINE at (612) 625-0000

In 1851, only two years after Minnesota formally became part of the Northwest Territory of the United States, its earliest European-American settlers decided to create a great university that they prophesied “would put Harvard in the shade.” Badgered by Alexander Ramsey, governor of the territory and Henry Hastings Sibley, its representative in Washington, Congress passed an act reserving 46,080 acres of land “for the use and support of a university”; the two houses of Minnesota’s legislature moved swiftly to choose a board of regents, which soon decided that all necessary steps must be taken to establish a preparatory department.

The *St. Anthony Express* (St. Anthony was the original name of Minneapolis) enthusiastically supported the project in an editorial: “We should start with the determination that not a single youth of either sex should be permitted to leave the territory to acquire an education for want of an institution at home fully endowed to meet the needs of this class.” The university opened its doors on November 26, 1851, to an enrollment of 20 pupils. Fees ranged from \$4 a quarter for such basic subjects as grammar and spelling to \$6 a quarter for Greek, Latin, French, bookkeeping, and higher mathematics.

The university’s first decade was a series of calamities, from the withdrawal of a gift of land by one of the regents to the effects on Minnesota of the financial disaster that befell the United States in 1857. The regents pressed on with their plans to erect the building known as “Old Main”; however, the school was forced to shut down in 1859, one year after Minnesota achieved statehood.

Though “Old Main” was indeed built, it stood neglected—as did all other considerations about the shuttered university—during the years of the Civil War (1861–65) and the concurrent Indian uprisings, both of which took young men away from the area.

Salvation came in two forms: the Morrill Act signed by President Abraham Lincoln in 1862 and the involvement with the university of entrepreneur John Sargent Pillsbury (who went on to found the milling company that still bears his name). The Morrill Act allotted to any state which was willing to set up an institution of higher education to teach agriculture and the mechanic arts 30,000 acres for each of its representatives in Congress. Minnesota’s two senators and two representatives entitled it to 120,000 acres. John Sargent Pillsbury’s involvement with the university began about the time the Morrill Act was signed. When Pillsbury came to Minnesota, he opened a hardware business. According to James Gray in his centennial history of the university, Pillsbury was on the brink of suing the regents for debts owed to him (including \$5.50 for locks, nails, and iron used in the construction of Old Main). However, he was turned from potential foe to champion of the university, when Minnesota’s first governor, Henry A. Swift, chose him as a regent. Pillsbury’s initial reaction was that he was “not fit” for the assignment. He had no college education himself, but he educated himself by extensive reading. Gray describes Pillsbury’s first visit, made with a committee of the legislature, to the decrepit “Old Main”:

The news was very bad indeed. Old Main was in the quite illegal possession of a group of casual folk who became surly at having their privacy invaded. As the committee members entered one room turkey flew at them in bewildered excitement; in another the squatters had improvised a barn loft; in the central hall the floor had been ruined by wood-splitting operations.

In addition to its physical decrepitude, the university was burdened with debt. To solve the problem of the deep debt, Pillsbury sold lands and negotiated compromises with creditors so that by 1867 every creditor had been satisfied. In that year the university had two faculty members and an admissions policy allowing both males and females to enroll. Within the first years of his tenure as regent (a position he held from 1863 until his death in 1901), Pillsbury had taken a dying idea and brought it to life.

William Watts Folwell, a graduate of Hobart College in New York became, in 1869 at age 36, the university’s



University of Minnesota

first president. Folwell, who sometimes said he must sound like a “wild educational mutineer,” had ambitious plans for the university. His “Minnesota Plan,” adopted unanimously by the regents in 1870, called for three clearly marked educational phases: the Latin school (the elementary grades of today); the collegiate department, which would teach the disciplines needed for higher education; and the professional colleges. He advocated “throwing the usual work of freshmen and sophomores out of the proper University course and merging it into the old preparatory department.” Believing that there was

a natural boundary between the first two and the final two years of instruction, he wanted the university to abandon the studies of the first two years, which he said were often “drudgery.” Folwell encountered opposition on several fronts, ranging from the regents’ refusal to move the university away from the center of a growing city to Lake Minnetonka and their unwillingness to approve construction of more buildings, including a library. The legislature refused most of his visionary ideas of expanding the campus and departments, but many of them eventually came to pass under future leadership.

Through much of the 1870s and 1880s, the university's enrollment numbered about 300. Though agricultural instruction was added to the curriculum, it was at first met with almost total indifference. As historian Gray wrote, "Though entrance requirements were modest (virtually anyone over 16 could apply) no one appeared. Farming, to the pioneer, was a matter of bending one's back over a hoe, not over a book." Despite efforts to impress members of existing agricultural societies, such as the State Grange, with the value of agricultural education, in 1880 no one enrolled in the agricultural college.

The university's second president came to be known as "Cyrus the conciliator." After coming to the university from Yale in August 1884, he served more than 25 years. Cyrus Northrop began his tenure with a \$6,000 a year salary, double that provided by any other midwestern school, and a penchant for strong ideas. During his first decade as president, the student body grew to 2,000, and several specialized colleges were created: one for law, one for medicine, and another for agriculture. A School of Agriculture was created (so named to prevent confusion with the College of Agriculture which had attracted almost no students). It offered a two-year course open "to such boys as aspire to become successful and intelligent farmers." Women were admitted for summer courses in agriculture and home economics in 1894, and three years later they were admitted on equal terms with men.

Northrop proved so visible and powerful a figure on the university landscape that, according to Gray, "he was asked to be father, confessor, unofficial chaperone, unpaid employment agent, public sustainer of the spirit, and one man committee on student loans (from his own pocket)." He moved among the legislative and academic worlds with skill, building the university and hiring faculty who, for example, started the Minneapolis Symphony Orchestra and created schools for mines, dentistry, education, nursing, etc.

Northrop's successor, George Edgar Vincent, began his tenure in 1911 with an inaugural address that proved him a visionary:

We are coming to realize that good farming is not a robbing but a compensating of the soil; that it costs as much to plant bad seed as good . . . that public health is national capital; that juvenile delinquency comes less from depravity than from deprivation; . . . that industrial accidents are not lawyers' perquisites but costs of production; . . . that all idleness is not due to indolence; . . . that the United States must trust less to "manifest destiny" and more to constructive purpose.

With a gracious charm, wit, and natural gregariousness, Vincent grew to be among the best loved presidents in the university's history. One of his first moves was to create an "extension service" to bring the university to the

people through night classes, correspondence courses, lectures, and other events in villages and towns throughout the state. Vincent tried other outreach techniques that he had learned from his father, a Methodist minister who had started the Chautauqua movement as a summer school training ground for Sunday school teachers. One such technique was University Week, which offered a week-long program of lectures and classes led by university professors in towns and villages. Another was the "University of the Air," broadcast throughout the Twin Cities (Minneapolis and St. Paul) on the campus radio station. Although Vincent would not allow his own voice ever to be broadcast on radio, he approved of spreading the word about the university through the then-new medium.

The outbreak of World War I brought uncertainty to the campus as many young male students went off to fight in the war or to work in munitions factories or on family farms. Several administrators went to Washington, D.C., to work in the government. Other faculty members were assigned various war-related tasks. Enrollment plummeted badly in 1917–18. Into this difficult environment came Vincent's replacement, Marion LeRoy Burton, who almost immediately suffered setbacks from war-related problems and tensions. Greatest among these was the state's Commission of Public Safety, charged with ferreting out German sympathizers. One of their targets was Professor William Schaper, head of the department of political science. He was fired by the regents for "his attitude," which made him "unfit to discharge the duties of his position." Even U.S. President Woodrow Wilson attempted to intervene on Schaper's behalf, but the firing stood, and the charges were not finally rescinded until 20 years later.

Once the war ended, so did issues relating to it. Burton launched a "comprehensive building program," which he asked the regents to present to the legislature. He wanted an auditorium, to be named after Northrop, and several buildings alongside it on a mall that had been designed decades before by Cass Gilbert, architect of the U.S. Capitol. With an enrollment of 8,000, the university was in dire need of new buildings and of repairs to existing ones. However, before he could see the plan through Burton accepted the presidency of the University of Michigan and left Minnesota in 1920.

Lotus Delta Coffman, remembered as originator of the university's College of Education, began his tenure as president in 1920, just as a fiscal crisis erupted. Despite record enrollments, the legislature offered the university a pitifully small budget, an action which caused faculty and students to protest vigorously and to point out what one student leader called "poor facilities, congested conditions, and inadequate teaching staff." The state legislators finally ended their opposition and passed a larger budget. The university was at last able to construct Northrop Auditorium with a group of buildings lining a mall in

front of it, though considerations of cost forced modifications in Cass Gilbert's design. A welcome change occurred when the university persuaded the Northern Pacific Railroad to reroute its tracks away from several university buildings, thus reducing the terrible noise and vibrations that had plagued classrooms and laboratories.

In 1924 Coffman created a committee whose work led to the establishment of University College, aimed at gifted undergraduates; later he established the General College for those at the other end of the academic scale. The General College offered courses that connected the academy with real life situations. A developmental psychology course dealt with family life, a mathematics course looked at loans, etc. Though the college came to be known by such nicknames as "All Fools College," Coffman was proud of his contribution to helping students who learned at a slower pace. Another addition to the university was the Center for Continuation Study, where graduates could come for concentrated short courses. In 1936 the center offered its first courses; suggestions for courses from the public were often implemented. While physicians have used the center more than any other group, courses have been offered in such disparate disciplines as social welfare administration and mining engineering.

By 1933, the economy of the midwest was in a sad state. Coffman was worried about ■ student body that would dwindle because students could not afford to pay for their education. Accordingly, a plan was devised whereby students attended classes and in between worked at such jobs as examination-readers, cafeteria assistants, typists, etc. For their labors they received small stipends from both the federal and state governments. The plan, which came to be called the National Youth Administration, expanded to include graduates who were unable to find jobs and who came back to the university to assist with research projects. Dr. Maurice Visshcer attested to the invaluable assistance of these students when he remarked that many of Minnesota's cancer studies "could not have been carried on without this assistance."

Walter Catella Coffey served as president during the years of World War II, when enrollment peaked and then dramatically plunged as young men left to fight in the war. On the home front, an important discovery was made in the University of Minnesota's department of physics. As the chairman of the department wrote in ■ ledger book, "In March and April, 1940, [Albert O.] Nier established U 235 as responsible for the slow fission in Uranium." This proved a significant discovery in the creation of the atomic bomb. Meanwhile, Coffey's background as dean of the College of Agriculture (1921–41) helped the university win funding for ■ School of Veterinary Medicine within the College of Agriculture (veterinary medicine became ■ college in 1957). When Coffey relinquished his post in 1945, he reminded an audience of graduating seniors that there "is scarcely ■

family [in Minnesota] with whom [the university] has not had instructional contact; the results of its research have made life better and more secure in rural and metropolitan areas alike."

By the time James Lewis Morrill came from Ohio State University to assume the presidency of the University of Minnesota in 1945, "University City" was the fourth largest city in the state. After the federal government passed Public Law 346, the so-called GI Bill, more than 16,000 former soldiers enrolled at the university. Total enrollment jumped from 15,000 before the war to 28,000 after it. The legislature was generous in giving the school the largest budget in its history. In order to help students cope with its ever-growing size, the university instituted a counseling service, which offered students at all levels assistance with academic and personal problems. In the 1940s, two doctors at the university, Dr. J. Charney McKinley and Dr. Starke Hathaway, created the Minnesota Multiphasic Personality Inventory, still the most widely administered personality test. Psychologists applaud its high level of validity in helping them diagnose levels of depression, anxiety, and low self-esteem.

The medical school, in particular, grew enormously during the postwar period and attracted four to ten times as much funding as other medical schools in the Big Ten. The Heart Hospital opened in 1951 to treat patients with heart problems. The first open heart surgery in the world was performed at the university in 1954. In other medical break-throughs, the university's medical division developed the first heart-lung machine in 1955. The first pancreas transplant occurred there in 1966, the first successful bone marrow transplant in 1968, and the first CAT total body scan in 1978. The university had cemented its important medical relationship with the world-famous Mayo Clinic when, after years of delay, the Mayo Memorial Hospital was dedicated in October 1954.

With the addition of three campuses outside the Minneapolis-St. Paul area—one in Duluth, one in Morris, and one in Crookston—the University of Minnesota became the largest university in the United States, according to the *Chronicle of Higher Education's* 1993 figures, which showed a total enrollment of 51,880. In 1993, the university's endowment was \$122 million, second among public institutions in the United States.

The University of Minnesota has had many distinguished faculty and graduates. Faculty member and agricultural expert Norman Borlaug won the Nobel Peace Prize in 1970, and Professor Dominick Argento won the Pulitzer Prize for Music in 1976. Graduates have moved to respected careers in communications and politics: both Eric Severeid and Harry Reasoner went on to distinguished careers in television news. Two former Minnesota senators and later vice-presidents of the United States, Hubert H. Humphrey and Walter Mondale, both attended the university.

Writer, radio personality, and University of Minnesota

alumnus Garrison Keillor lauded his alma mater at a 1992 alumni dinner: "To speak up for the University of Minnesota is like writing an ode in praise of the sun—you assume it's been done by smarter people. But let's say it anyway: the University is one of the glories of this state."

Further Reading: James Gray's *The University of Minnesota: 1851–1951* (Minneapolis: University of Minnesota Press; London: Oxford University Press, 1951) is ■ compre-

hensive and detailed history of the university's first 100 years. Gray's *Open Wide the Door: The Story of the University of Minnesota* (New York: Putnam, 1958) updates and condenses his previous history. No general history of the university has appeared since.

—Frank M. Jossi and Mary Elizabeth Devine

UNIVERSITY OF MISSOURI (Columbia, Missouri, U.S.A.)

Location:	Columbia, Missouri, 125 miles west of St. Louis, Missouri, and 125 east of Kansas City, Missouri.
Description:	Oldest campus in the state university system (Columbia, Rolla, St. Louis, and Kansas City). The University of Missouri enrolls about 23,000 students in undergraduate, graduate, and professional schools.
Information:	University of Missouri-Columbia Office of Admissions 130 Jesse Hall Columbia, MO 65211 U.S.A. (800) 225-6075 in Missouri (314) 882-2121
Visiting:	Guided tours of the campus are available year-round, Monday through Friday.

The University of Missouri is the oldest public university in Thomas Jefferson's Louisiana Purchase territory. A clause in the Act of 1820 admitting Missouri to the Union gave Missouri a land grant of two townships, the sale of which was to provide funding for a public university. By 1839, enough cash was available to endow a university.

The big question was where the University would be located. The Missouri General Assembly determined the award would go to the one of six counties offering the largest support in land and money, a competition the counties took seriously.

Logistics determined the Assembly's decision to limit the location to six central counties on the Missouri River. First, lack of roads made travel difficult. A central location came as a sort of equalizer since students from all parts of Missouri would have a relatively equal distance to travel by horseback. In addition, in the early years, most of Missouri's population was concentrated in and around St. Louis, and along the Mississippi and Missouri rivers because rivers formed a major transportation venue.

Boone County, one possible site, became the logical choice. While in 1840 the St. Louis census showed a population of 16,000, Boone County ranked next with 13,561. Wealth (defined by slaves, livestock, and cereal grain production), too, placed Boone among the top contenders.

Although Boone County calls to mind the log-cabin dwelling Daniel Boone, the Booneslick area population

wasn't only composed of cabin dwellers. Under the Missouri Compromise, Missouri came into the Union as a slave state, leading a number of "bluebloods" from Kentucky to import their opulent Southern lifestyle to the area: tobacco crops, slaves, cash, and Whig politics. The county seat, Columbia, had a population of about 700 in 1840, a third of whom were slaves.

While many of Columbia's leading citizens belonged to the Whig political party, the state was predominately Democratic. These contrary political viewpoints would haunt the university financially for some years to come since the Missouri legislature controlled the purse strings.

Public transportation to Columbia was better than service to many other frontier towns. Jonas Viles described its location: "The town was on the stage route from St. Louis to Fayette and the West. In 1841 there was one regular semi-weekly river packet from St. Louis to Glasgow and in 1842 three, all stopping at Providence, Columbia's river port some fourteen miles away, with a regular stage to Columbia in 1843."

How did the university finally come to be awarded to Boone County? Chicanery. More than one county purchased land and inflated the value of the acreage as part of their "bidding package." Boone County just did it better. According to Jonas Viles, "Her subscription was \$82,381 in cash and \$35,540 in land, a total of \$117,921." Although the value was overstated, the citizens' enthusiasm and dedication was not. At a time still touched by the Panic of 1837's seven-year depression, almost 900 people contributed money or land. Columbia gladly welcomed the new school—then named the University of the State of Missouri.

A board of state-appointed curators oversaw the university's organization. The board selected John Hiram Lathrop, a graduate of Yale, as the first university president.

Despite the lack of an official campus building, classes began April 14, 1841, under what is now the College of Arts and Sciences, the oldest academic division in the university. The first university catalog listed 77 students. Today's campus has 13 undergraduate and 5 graduate schools, 300 buildings, and about 23,000 students.

The first campus building was Academic Hall (1843), designed by Stephen Hills, Missouri state capital's architect. Today the only reminder of Academic Hall is a row of graceful columns, survivors of a fire in 1892.

In contrast to the campus beginnings (when the first building cost under \$75,000), the most recent building cost \$5.4 million. Named for Lee Hills, an alumnus who won the Pulitzer Prize, the building houses the School of Journalism's daily newspaper and other operations.



University of Missouri

In 1849 the library held only official documents, a set of Livy, some reviews, and Blackwood's magazine. Today the library system is made up of Ellis Library (main library) and seven branch libraries. The collection consists of 2.58 million volumes, 5 million microforms, 22,973 journal subscriptions, and special collections.

The Civil War caused problems for the developing university. Even before the war the largest number enrolled was 181. With the Civil War, things got so bad that the Board of Curators suspended operations in March 1862. The Academic Hall housed federal troops, officers resided at the president's house, and the Normal School served as a hospital. Horses were stabled in the campus enclosure. Despite this adversity, the university reopened in November 1862.

Incidentally, one Civil War souvenir remains. Missouri's football team name "Tigers" comes from the Columbia Civil War militia organized to protect the town; they called themselves the Missouri Tigers.

Between the ravages of war and the always uncertain

finances because of the dependence on legislative appropriations and political climates, the university struggled to stay open. Since the Missouri legislature presumed Columbia's "disloyalty" during the Civil War, the university faced a hostile legislature when asking for budget approval.

Finally, relief came when the Missouri Assembly located the College of Agriculture and Mechanic Arts at Columbia in 1870. With the college came a land grant for 330,000 acres. The university's survival was no longer in question.

With America's entrance into World War I, classes thinned as students and faculty left for service or to work in a war-related industry. Military training, which already existed on the campus, expanded with fraternity houses and dormitories becoming barracks.

World War I was followed by a period of calm with enrollment increases but with no appropriation increases to help the university move forward. Then the Depression hit. With a budget that had no extras to begin with, cut-backs struck hard and hit essential programs. But the fed-

eral Public Works Administration, developed because of the Depression, brought about one of the most extensive building programs in the history of the university.

World War II saw a healthy enrollment drop from over 5,000 in 1938 to 1,500 in 1943. In response to the war, the university developed educational programs for military services, the first such being a diesel motor school.

The surge of students on the GI bill came in the fall of 1946, catching the university with a shortage of instructors, classrooms, and housing. Barracks from Fort Leonard Wood were brought in to help relieve some of the crush.

As changes came to the physical side of the university with the addition of buildings and courses, so change came to the student body. From a predominately well-to-do male student body in the early days of the university, today men and women of all races and economic strata enjoy the opportunity to study at this public institution. However, the change took time.

The first Women's Rights Convention met in 1848 in Seneca, New York. Despite this national voicing of the demand for women's rights, female students took almost 30 years to show at the University of Missouri. Even then, a woman's right to be a student there came quietly with no grand acknowledgment, and with restrictions.

Female students first appeared in the 1868-69 catalog as the last item under the Normal College. Twenty-two names are listed under the heading of "Ladies." In 1869-70, the Normal College had 42 female students. By the 1870-71 catalog, the names of the female students were no longer listed separately from male students. Women were allowed to attend regular classes by 1871-72.

Easing female students into campus life came gradually but successfully. In the 1873 catalog, President Daniel Read said: "Finding . . . that the young women at 'the Normal' did no manner of harm, we very cautiously admitted them to some of the recitations and lectures in the University building itself, providing always that they were to be marched in good order, with at least two teachers, one in front and the other in the rear of the column, as guards . . . By degrees, and carefully feeling our way, as though explosive material was all around us, we have come to admit them to all the classes in all the departments, just as young men are admitted."

Mary Louise Gillette became the first graduate from the Normal School in 1870, and in 1874 a woman was valedictorian.

A setback came in 1876 with a new president, Samuel Laws, who seemed to prefer no female students at the university or at the very most ■ "separate but equal" situation. Laws's rules for female students included their wearing a uniform. A woman was appointed a principal of the ladies department, her main job being to ensure ladylike behavior.

Under Laws's administration, a new course of study designed specifically for women led to the degree of A.D.B., *Artium Domesticarum Baccaluarea*, adopted in

1880. The degree stressed courses in art, literature, and domestic chemistry and economy—all adapted to the "culture of woman." The A.D.B. degree proved so unpopular that only seven women ever took it.

Things have changed since then. The university opened co-ed dorms in 1977 and today women comprise about 50 percent of the student body. Another change in 1977 was the addition of a minor in black studies in the College of Arts and Sciences in response to the needs of black students.

With Missouri admitted to the Union as a slave state and ■ number of leading citizens of Columbia, Missouri being pro-slavery, admitting blacks to the university was a touchy subject for many years. Indeed, legally under the Missouri constitutions adopted after the Civil War, the official state policy indicated "separate but equal" schools. To account for unequal educational opportunities, blacks were shunted to other states with "out-of-state tuition" scholarships.

In the 1930s four black graduate students applied for admission to the university and instead of being admitted, found themselves referred to Lincoln University, an all black university. Lloyd L Gaines, who had applied for the School of Law, filed a writ of mandamus in the Boone County Circuit Court to force admission. The case went all the way to the United States Supreme Court where out-of-state tuition scholarships were declared unconstitutional. By the time the decision was handed down, Gaines had disappeared from the scene.

Finally, in 1950 three black students won admission in professional or graduate programs. Seeing that changes would be coming, the Board of Curators appointed a committee which created a set of rules for admitting black students. Basically the rules said that only if a course wasn't available at Lincoln University, would ■ black Missouri resident be admitted to the University of Missouri. All such restrictions were removed with the decision of the United States Supreme Court in the case of *Brown vs. the Topeka Board of Education*, declaring public school segregation unconstitutional.

At the same time the university struggled with social inequalities, funding, and growth, it was building a national and international reputation and becoming a school of choice. Now students come from every state and more than 100 foreign countries.

A major claim to international fame held by the University of Missouri is its school of journalism which was established in 1908. Its importance rests not only with the quality of the curriculum (rated by the Associated Press Managing Editor as one of the best in the nation in 1991), but with the fact that the school is the world's first school of journalism.

Although other educational institutions had given courses and had chairs of journalism prior to 1908, the University of Missouri holds the distinction of creating a school dedicated to teaching journalism. The board

stressed the fact that the new school of journalism would be "coordinate in rank with the schools of law and medicine."

The establishment of the school of journalism came about despite controversy regarding the practicality of instruction in journalism sparked by Joseph Pulitzer's proposal to endow a school of journalism at Columbia University. Viles noted, "Disapproving editors expressed the opinion that journalism was a subject that could not be taught, that success in it required talent for it and a long apprenticeship under conditions that could not be duplicated in academic halls."

The controversy helped the university decide on three principles for the journalism school: first, a laboratory newspaper was needed for practical experience; second, teachers would be experienced newspapermen; and third, a broad liberal education would be emphasized.

These principles were followed from the beginning. The school's first dean, Walter Williams, was the editor of the *Columbia Herald*. Other newspapermen joined the staff: Silas Bent, *St. Louis Post-Dispatch*; Charles G. Ross, *St. Louis Republic*; and Frank L. Martin, *Kansas City Star*.

Classes began September 14, 1908, with 72 of the university's 2,944 students enrolled as journalism students. That same day an issue of the laboratory newspaper, *The University Missourian*, was prepared by the class.

Today the approximately 800 journalism students experience hours of practical laboratory work in a variety of media settings: print at *Columbia Missourian* (six-day-a-week general newspaper for Columbia and Boone County), *Missourian Weekly* (Wednesday, Sunday editions), and *Weekend* (magazine and entertainment supplement); radio and TV at KBIA (MU's public FM radio station which covers central Missouri) and KOMU-TV (NBC affiliate, broadcasting news and public affairs programs).

A broad liberal education was and is emphasized as the foundation for the journalism degree. When the school first opened, of the 120 hours needed for graduation, only 24 hours had to be in journalism. Today the bachelor of journalism degree requires 33 hours of journalism and 90 hours of non-journalism credits; at least 65 hours of the 90 non-journalism credits required of degree seekers must come from the College of Arts and Sciences.

The school of journalism retains strong links to the world of professional journalism. For instance, the Frank E. Gannett Foundation presented a gift on behalf of the country's largest newspaper chain; the result was Gannett Hall.

News directors come to the campus to select the national winners of Radio-Television News Directors Association's Edward R. Murrow Awards. The school is the headquarters for the Society of American Business Editors and Writers, the Missouri Interscholastic Press Association, and the national headquarters for Investigative Reporters and Editors Inc. The Pictures-of-the-Year competition selects the best photojournalism from news-

paper, magazine, and picture editing categories and a book, *The Best of Photojournalism*, is published annually.

A special annual event, Journalism Week, began in May 1910 as a conference of editors. During Journalism Week, classes are canceled so students and journalists can attend lectures and workshops given by faculty and visiting speakers. Also, the Missouri Medal of Honor, one of journalism's most prestigious prizes, is awarded.

The school of journalism boasts the Freedom of Information Center which indexes newspaper and magazine articles on information access and press freedom and responds to more than 1,000 requests from professionals for information. The importance of the center was recognized when it was established in 1958 with worldwide news coverage and a special commemorative U.S. postage stamp.

Distinguished graduates of the school of journalism include: Howard Lamade (1913 graduate) and his brother George (1916 graduate), publishers of *Grit*; Walter D. Scott, president and chief executive officer of NBC; Elmer Lower, head of NBC News; William Manchester, journalist and author of *The Death of a President*; Helen Delich-Bentley, maritime editor of the *Baltimore Sun*; James Lehrer, coanchor of the MacNeil-Lehrer Report; Marshall R. Loeb, editor of *Fortune*; and Seymour Topping, managing editor of *The New York Times*.

The school of journalism's first dean took the profession of journalism and its responsibility to the public seriously. Walter Williams wrote the journalist's creed which contains beliefs including: "I believe that the journalism which succeeds best . . . fears God and honors man; is stoutly independent, unmoved by pride of opinion or greed of power, constructive, tolerant but never careless, self-controlled, patient . . .; is a journalism of humanity, of and for today's world."

Somehow this philosophy (engraved on a plaque in Jay H. Neff Hall) makes it fitting that the original tombstone of Thomas Jefferson, author of the Declaration of Independence, and supporter of individual rights and freedom of speech, rests on the campus of the University of Missouri in Columbia.

Further Reading: James Olson's *The University of Missouri: An Illustrated History* (Columbia: University of Missouri Press, 1988) provides an interesting and well-illustrated account of the history of the university from the beginning until the 1980s. Another detailed account is Jonas Viles's *The University of Missouri: A Centennial History* (Columbia: University of Missouri, 1939) which deals extensively with the early history of the university. *A History of the University of Missouri* by Frank F. Stephens (Columbia: University of Missouri Press, 1962) is another inclusive history of the university.

UNIVERSITY OF MONTPELLIER

(Montpellier, France)

Location: Montpellier, located in the Hérault department of southern France, approximately 750 kilometers south of Paris, 164 kilometers east of Marseille and 10 kilometers from the Mediterranean Sea.

Description: Three autonomous, state-financed universities founded in 1970 under France's Orientation Act of 1968, which provided for reform of higher education. They replaced the former University of Montpellier. University of Montpellier I consists of teaching and research units in law, medicine, pharmacy, economics, and social sciences; University of Montpellier II teaches science, engineering, technology, and business management; and University of Montpellier III focuses on arts and letters.

Information: Université de Montpellier I
BP 1017
34006 Montpellier Cedex
France
(67) 41-20-90

Université de Montpellier II
Place Eugène Bataillon
34095 Montpellier Cedex 5
France
(67) 14-30-30

Université de Montpellier III
Place de la Voie Domitienne
BP 5043
34032 Montpellier Cedex 5
France
(67) 14-20-00

“Because wisdom enlightens the human heart and leads it to virtue.” In this way begins the papal bull issued by Nicholas IV on October 26, 1289, that acknowledged the existence of ■ *studium generale* comprised of masters and students of the town of Montpellier. The papal bull recognized and joined together the already existing faculties of medicine, civil and canon law, and the arts, and it served as the founding charter of the University of Montpellier. Sources which give 1220 as the date the university was founded refer to statutes confirming a university of medicine (described below).

The settlement of Montpellier developed between the eighth and tenth centuries and, as an inland port, played

an important role in trade with the Orient. The merchants who dealt in spices and medicinal plants knew the therapeutic value of the products they sold; those who were better educated read the translations of Hippocrates. Thus students, drawn by the merchants' knowledge of medical science, were the basis of the first schools of medicine to form at Montpellier in the twelfth century. The town of Montpellier acquired a charter in 1141.

A medical school existed at Montpellier as early as 1137. After completing a course in the arts at Paris in that year, one Adalbert, later archbishop of Mainz, is said to have studied at Montpellier. According to the writings of Saint Bernard, the Archbishop of Lyons went to Montpellier to be cured.

Several possibilities have been suggested concerning the origins of a university of medicine: it was perhaps “an offshoot” of the famed University of Salerno; it may have resulted from the medical science that “survived the downfall of the Saracenic Empire” when Muslim fugitives, after a defeat by Charles Martel in 737, fled to the area that later became Montpellier; contact with the Jewish and Arabic schools of twelfth-century Spain or with the Jewish medical schools at nearby Arles and Narbonne could have led to its formation. In any event, ■ university of medicine was the first of the schools founded at Montpellier that were united by the charter of 1289.

The Arabic influence is exemplified in the Muslim philosopher and physician Abu Ali al-Husein ibn Sina (980–1037). Avicenna, as he was known in the west, was considered one of the greatest writers on medicine of the Middle Ages. His *Qanum-fi-l-Tibb* (*Canon of Medicine*), translated into Latin in the twelfth century, served as one of the chief texts in European medical schools from the twelfth into the seventeenth centuries; it was required reading at the University of Montpellier until the mid-seventeenth century.

The works of a Jewish physician, Moses ben Maimon (1135–1204), called Maimonides in the Christian world, were also renowned; a Latin translation of his *Guide* was taught at the University of Montpellier. An important Jewish colony was established in Montpellier, and it produced several able teachers.

Licenses to teach and to practice medicine may not have been instituted in Montpellier until the thirteenth century. An edict issued in 1181 by William VIII, lord of Montpellier, granted to all who so willed the right to teach medicine. A university of medicine is mentioned in statutes that were confirmed in 1220 by Cardinal Conrad and by a second cardinal in 1239; the statutes were confirmed by papal bull in 1242. These statutes were appar-



University of Montpellier

ently the first to provide for the appointment of a chancellor, nominated by the bishop and three masters, to preside over the university. In 1240, the masters appointed "arbitrators to interpret or modify these statutes." By 1272, King James I of Aragon, then overlord of Montpellier, forbade the practice of medicine at Montpellier by anyone who had not been examined and licensed.

In 1309, Pope Clement V declared certain books which he, upon the advice of his Montpellier physicians, considered necessary reading for students of medicine. The list consisted of works by the second-century Greek physician Claudius Galen, perhaps the most renowned of ancient medical writers and one whose influence continued into the eighteenth century; Avicenna; Constantinus Africanus, who brought his translations of Greek and Arabic works of medicine to Salerno; Isaac Judaeus; Rhazes, a Persian healer of the ninth and tenth centuries whose works were among those translated by Constantinus; Johannicius; and Hippocrates.

Several changes occurred in 1340. Students were required to attend lectures for two years in order to attain a bachelorship in medicine; bachelors and senior students spent the summer in practice. Before earning their bachelor degrees in medicine, students accompanied their doctors on visits to the sick and, under the doctors' supervision, experimented upon the patients. The length of time to obtain a doctor's degree was five years for masters of arts and six years for other candidates. In addition, a biennial anatomy class was authorized at Montpellier. For a period of several days, a doctor of medicine would lecture students as a surgeon dissected a cadaver.

The Montpellier surgeon Gui de Chauliac developed a method of surgery and published, in 1367, a treatise on anatomy. Most of his methods, however, were taken from the writings of the ancient physicians.

Will Durant in *The Age of Faith* describes the medieval student as a man "of any age. He might be a curate, ■ prior, an abbot, a merchant, a married man; he might be a lad of thirteen, troubled with the dignity of his years. . . . He encountered no entrance examinations; the only requirements were a knowledge of Latin, and ability to pay ■ modest fee to each master whose course he took."

The inception of a university of law at Montpellier dates from the 1160s when the noted jurist Placentinus, who had taught at Bologna and Mantua, fled to Montpellier, where he sought asylum from "the jealousy of less distinguished colleagues." Around 1230, licenses were being granted and increased the number of doctors and students of law at Montpellier. The bishop, supported by a royal brief, claimed control over the bestowal of licenses in canon and civil law (a right he also exercised with the medical school). By 1268, ■ college of doctors in law, backed by statutes issued by the bishop and the doctors, existed. When Pope Nicholas IV issued the bull recognizing the *studium generale* in 1289, the law school had only recently attained ■ degree of importance in its field.

The students of law soon began to resist the control exercised over them by both the bishop and the masters. In 1320, the bishop issued a proclamation against "secret conventicles and congregations," "confederations and colligations," and "scholars of one province against the scholars of another." Around 1339, with the aid of the cardinal legate Bertrand di Diaux, a compromise was reached: statutes, modeled after those of Bologna, allowed a "student-university of a very modified type."

One of the law university's most famous students was the Italian poet Francesco Petrarca (1304–74). Although Petrarca, who spent seven years at the universities of Montpellier and Bologna ("seven wasted years," he called them), detested law, it was during his days at Montpellier that he wrote the first of his poems that remain in existence today.

A university of the arts was confirmed in statutes of 1242. In his *Summa*, Placentinus hints that masters of arts existed at Montpellier as early as the end of the twelfth century. "The ancient faculty of Arts of Montpellier received its first statutes from a bishop of Maguelone: Jean de Montlaur, second of that name. They were dated from the sixth day before the Calends of April (March 27 on the ancient Roman calendar) in the year 1242. These statutes apply to the schools of grammar and logic." The statutes of 1242 recognized the authority of the bishop; they were not drafted by the masters. This was not a student-university.

A university of theology did not officially exist at Montpellier until 1421, when Pope Martin V issued a bull creating a *studium generale* in theology, with the bishop as chancellor. As early as 1263, however, a college had been founded for the Carthusian monks at nearby Valmagne by James I and may have served as the nucleus for the later university.

The University of Montpellier retained its position as one of the great *studia* of Europe until the end of the fourteenth century. The last half of the fourteenth and most of the fifteenth centuries, however, saw a general decline in many of the universities of Europe. "The fifteenth century was a period of decadence in the universities generally, though not equally so everywhere."

In 1362, the number of students attending the law university had declined from 1,000 to 100; the medical school also experienced a decrease in the number of students. Anna M. Campbell, in *The Black Death and Men of Learning*, states that the University of Montpellier was "destitute of lecturers and auditors because in the said *studium* where formerly ■ thousand students used to dwell, scarcely 200 are to be found today." Around 1390, the students were complaining against the masters, and enrollment of students at the university continued to decline.

The run-down condition of the university is exemplified by a student at the *Collège des Douze Médecins* (College of a dozen doctors), who, in 1422, described himself

as its sole medical student. In 1494, the rebuilding of the *Collège des Douze Médecins* was a sign that the university's decline was near an end.

During the Renaissance, the university once again came to life. Charles VIII and Louis XII, influenced by their Montpellier physicians, offered support and granted favors to the university. In 1498, King Louis "made an annual grant of 500 *livres* to the *studium*, 400 of which were to be devoted to providing salaries of 100 *livres* per annum for four doctors."

In the sixteenth century, Montpellier was one of the most ardent centers of the Renaissance; the university included the five faculties of law and economics, medicine, sciences, letters and human sciences, and pharmacy.

In the 1530s, the writer François Rabelais, after a brief period of study at the medical university, was granted a bachelor of medicine. Soon afterward, he lectured on Galen and Hippocrates in the original Greek. The teachings of the Greek authors now took precedence; in 1567, after a petition by the students, Arabic authors were struck from the required readings. The Greek texts remained the principal source of teaching in the medical schools until the eighteenth century. In 1673, a doctor was "required on pain of suspension to cease teaching a doctrine contrary to that of Hippocrates, Aristotle, and Galen."

In 1552, a 15-year-old student from Basel, Switzerland, arrived in Montpellier to study medicine. For five years the young man, Felix Platter, kept a detailed account of his experiences in a journal that was translated into English in 1961. After his examination and matriculation on November 4, 1552, Felix was admitted to the baccalaureate program; he chose as his sponsor a Dr. Saporta, who would serve as his consultant throughout his years of study. Felix described his initial course as two or three lectures in the morning and the same number in the afternoon; the first dissection he attended was that of a boy who had died of a stomach abscess. A doctor presided, and a barber performed the operation. Many people, other than students, were present ("... even young girls, notwithstanding that the subject was a male"). Felix later described nighttime excursions to cemeteries to find bodies for dissection.

In his journal, Felix discusses more than his studies; he gives an account of the social history of the period immediately preceding the Wars of Religion (1562–98). His comments range from descriptions of public executions and the persecution of Protestants to such topics as Mardi Gras celebrations, travel throughout the region, and his surreptitious method of cooking eggs, which were forbidden during Lent.

After four years of study, Felix sat for his baccalaureate and was promoted to bachelor of medicine. He returned to Basel in 1557, married his childhood sweetheart, and became a distinguished physician.

Felix Platter, as a Swiss Calvinist, had been allowed religious freedom in Montpellier, a region sympathetic

toward Protestants. Conditions changed, however, in the years between Felix's return to Switzerland and the arrival of the Huguenot theologian and classical scholar Isaac Casaubon (1559–1614). Casaubon's parents were ardent Huguenots (French followers of John Calvin) and, following the St. Bartholomew's Day massacre of August 24, 1572, Casaubon received his first Greek lesson in a mountain cave in the Dauphiné region of France while in hiding from fanatical Catholic armies. Nine years later, he became a professor of Greek at the Academy of Geneva, where he taught for 15 years. In 1595, he was appointed to a professorship at Montpellier and served for three years.

In the seventeenth century, the University of Montpellier continued to attract students from France and distant countries. Medical science had advanced to the point where a degree from a recognized institution was required for the legal practice of medicine in western Europe.

The French universities provided a model for teaching and research for Europe until 1793, when the National Convention suppressed all universities in France. Higher education was reinstated by Napoléon I in 1806. The University of France, a centralized system of education under the jurisdiction of a ministry located in Paris, encompassed schools of medicine, law, and pharmacy, and faculties of science and letters; primary and secondary schools were also under its control. Changes occurred in the late nineteenth century, including the separation of church and state in education (March 1882). In 1896, the system was reorganized into 23 districts or *académies*, each with its own university consisting of faculties of medicine, law, pharmacy, science, and letters. Concurrently, the *grandes écoles*, elite institutions leading to engineering, teaching, and civil service degrees, were created.

Other than the establishment of two-year *instituts universitaires de technologie* or IUT (university institutes of technology) in 1966, few changes occurred between 1896 and May 1968, when student unrest led to the *Loi d'orientation de l'enseignement supérieur* (Orientation of Higher Education Act). As a result of this act, the University of Montpellier, in 1970, was divided into three autonomous units: the Universities of Montpellier I, II, and III.

The University of Montpellier I enrolls approximately 18,500 students in law and social sciences; economics; economic and social administration; medicine; pharmaceutical and biological science; industrial pharmacy; odontology; alimentary, oenological, and environmental studies; and physical education and sport.

The University of Montpellier II (*Université des Sciences et Techniques du Languedoc*) enrolls approximately 11,000 students in basic and applied sciences; engineering sciences; business management; chemical engineering; and technology (in both Montpellier and Nîmes).

The University of Montpellier III (*Université Paul Valéry*, named after the nineteenth- and twentieth-century

writer who studied at Montpellier) enrolls approximately 18,000 students in letters, arts, philosophy, and linguistics; Anglo-American, Germanic, Slav, and Oriental studies; human and environmental sciences; economic, mathematical, and social sciences; science of society; and Mediterranean Romance Languages.

Further Reading: For general information about the early history of the university and its times, consult *The Universities of Europe in the Middle Ages*, Volume II, by Hastings Rashdall (Oxford: Clarendon Press, 1942); *The Age of Faith*,

Will Durant (New York: Simon and Schuster, 1959); *The Age of Reason Begins*, Will and Ariel Durant (New York: Simon and Schuster, 1961); *The Age of Louis XIV*, Will and Ariel Durant (New York: Simon and Schuster, 1963). For a detailed account of medieval medical study experiences at the university, see the autobiographical work *Beloved Son Felix: The Journal of Felix Platter, a Medical Student in Montpellier in the Sixteenth Century*, translated by Sean Jennett (London: Frederick Muller Limited, 1961).

—Susan R. Stone

UNIVERSITY OF MUMBAI (BOMBAY)

(Mumbai, Maharashtra, India)

Location:	An urban campus located in the financial section of Mumbai (Bombay), on the southeastern shore of the city, formerly the old Fort Bombay.
Description:	A government-funded coeducational university of over 220,000 students and over 130 affiliated colleges. Offers B.A., M.A., and Ph.D. degrees in liberal arts, technology, law, commerce, and medicine.
Information:	University of Mumbai University Road Fort Bombay Maharashtra State 400032 India (22) 273623

In 1665, when British king Charles II took possession of the port and island of Bombay from the Portuguese (as part of the dowry of Princess Catherine Braganza of Portugal), the city was a small fishing village. Soon after, in 1668, Bombay became the official seat of the East India Company, a judicial system was established, and a hospital built—acts which marked the beginnings of modern Bombay. The city's population grew from 10,000 in 1668 to 110,000 in 1780, to 500,000 in 1850.

One significant development in Bombay as the population grew was the appearance of schools and colleges in the city. The Elphinstone Institution had its origins in a Christian school founded by Reverend Richard Cobbe in 1718. Opening its doors to Indians, it became known as the Charity School in 1820. In 1840 the school, which concentrated on the arts and sciences, changed its name to the Elphinstone Native Education Institution after Montstuart Elphinstone, the governor of Bombay from 1819 to 1827 and a pioneer in education. The Poona Sanskrit College was founded in 1821. Originally aimed at the education of the Brahmin class, the Poona College began to teach both Sanskrit and English in 1837, opening its doors to all classes. The Grant Medical College was founded in 1845, named for Sir Robert Grant, former governor of Bombay. It conferred a degree in medicine until the establishment of the University of Bombay.

In August 1852, the Bombay Association was formed. Comprised of educated members of the city's Hindu, Parsi, Muslim, and Jewish communities who sought to define the "wants of the people of this country, and the

measures calculated to advance their welfare, and of representing the same to the Authorities in India and England," they petitioned parliament to adequately fund university education in India. A second petition was sent in 1853, pleading for the establishment of vocational schools and for a law school to train Indians for the profession. These two petitions resulted in *Wood's Education Dispatch*, which became fondly known as the "Magna Carta of the Indian Education."

Wood's Educational Dispatch was composed in July 1854, by Sir Charles Wood, later Lord Halifax. In this dispatch Wood outlined plans for a university system in India. Because of his efforts, the Department of Public Instruction was established in 1855. Two years later, the country's first university system was incorporated. In January the University of Calcutta was established, followed by the University of Bombay in June and finally the University of Madras in September, three schools modeled after the London University. To be patterned after the London University meant that the University of Bombay did not offer teaching but would perform as an examining institution, testing students presented from local schools and colleges. The colleges first affiliated with the University of Bombay were the Elphinstone Institution (including the college and high school), the Poona College, and the Grant Medical College.

When the universities of Calcutta, Bombay, and Madras were incorporated in 1857, they were not corporations of scholars but of administrators. With a chancellor and a vice chancellor, the syndicate appointed examiners, granted degrees, and maintained the budgets of each university. The syndicate also created the by-laws with the approval of the senate. Every member of the senate was a faculty member of the affiliated school's faculty of arts, faculty of law, faculty of medicine, or faculty of civil engineering.

To matriculate at the University of Bombay one needed to be at least 16 years old. Students were expected to pass written and oral examinations in English and Indian languages, and mathematics. For the bachelor of arts degree, the young men pursued a course of study for 22 months. Then they appeared for the first examination in arts, followed by another examination for the bachelor of arts.

A bachelor of law degree was granted to graduates with the B.A. who went on to study an additional three years in the law school. A licentiate in medicine would be granted after successful examination at the end of the second and fourth years of study. A master's degree in medicine involved two additional years of study beyond the



University of Mumbai (Bombay)

licentiate. A master of civil engineering required four years of study beyond the bachelor of arts, with two of those years being spent as a journeyman for an engineer.

The first matriculation examination was held at the University of Bombay in 1859. There were 132 candidates who appeared to be tested in languages and mathematics. Only 22 passed the examinations. The majority of those who failed lacked knowledge of the native languages. The British-inspired university system emphasized Indian as well as English languages. The reason for this emphasis was the belief that teaching and learning were best done in the native tongue. Sir Bartle Edward Frere, chancellor of the University of Bombay, believed that the object of education was "to enrich your own vernacular literature through the learning which you acquire in this University . . . the learning which can here be imparted to a few hundreds . . . of scholars, must by you be made available through your own vernacular tongues to the many millions of Hindustan."

In 1861 the matriculated students appeared for the first examination. Only seven passed. In 1862 six candidates

appeared for the final examination for the bachelor of arts degree; only four passed. In addition, Grant Medical College presented candidates to the university, of whom only four passed. The first four to receive the bachelor of arts degree from the University of Bombay included Mahadev Govind Ranade and Ramkrishna Gopal Bhandarkar. An embarrassing error occurred when the names were posted. Initially only three of the names were listed as passing the exam. When Sir Alexander Grant of Elphinstone College noticed his student Bhandarkar's name was missing, he asked to have the test results examined. The results from another student's exam had mistakenly been interchanged with Bhandarkar's. The correction was made and Bhandarkar was awarded the bachelor of arts.

Ranade went on to become the first Indian judge on the Bombay High Court. A social reformer, he published two well-known books: *The Rise of Maratha Power* and *Essays on Indian Economy*. Bhandarkar became a teacher and researcher. He was knighted in 1911 and an institute in his name was established in 1919 called the Bhandarkar Oriental Institute.

The university was without a building of its own. For this reason the first convocation was held in the town hall. There the senate and the syndicate held their meetings, and university degrees were conferred there. In 1863 philanthropist Cowasjee Jehanghier offered to donate money toward the construction of a university hall, with his donation supplemented by funds from the government. The famed architect, Sir Gilbert Scott (architect of the Houses of Parliament in London), was called upon to design the buildings. Unfortunately, Scott, who had never visited India, performed all his work in England. Building plans were discussed via correspondence, a factor which caused so many delays that at one point Cowasjee Jehanghier grew impatient and threatened to withdraw his donation.

The government had settled on a site on the Esplanade opposite the Churchgate Street entrance, an area under development and with new roads. Thanks to Governor Sir Bartle Frere the century-old moat and fort ruins had been dismantled and the area was at the beginning of a building renaissance. Finally, on December 29, 1868, the cornerstone was laid by Chancellor Sir Seymour Fitzgerald. Afterward, due to government bureaucracy, the site was taken from the university and reassigned to the Bombay High Court. In November 1874, the Senate Hall was finally completed at a cost of Rs. 379,092. On March 4, 1875, the senate passed a resolution to rename the hall Sir Cowasjee Jehanghier Hall, in honor of his generous donation of Rs. 100,000 to construct it. The thirteenth-century French architectural structure stands 63 feet high. At the north end of the hall is a circular stained-glass window with the 12 signs of the zodiac. A gallery supported by ornamental brackets runs along the three sides of the hall. More stunning is the University Library and Rajabai Clock Tower (sometimes referred to as the Rajabai Tower Library), completed in November 1878 at a cost of Rs. 547,703. Built with funds from successful businessman Premchand Raychand, the tower was named in memory of his mother, Rajabai. Rising some 280 feet, the tower became the tallest building in Bombay. The ground floor has two wide rooms, a central hall, and a staircase. The tower forms a carriage porch 26 square feet in front of the building. The main building is 152 feet long with round open staircases leading to an upper floor used as a reading room with stained-glass windows. Above the carriage porch is a gallery extending 68 feet from the ground, followed by two more stages of galleries that combined rise 280 feet to the finial. Large figures carved from Porebunder stone depicting the different races and costumes of western India were set in the pillars above the first gallery. Above were similar statues showing different costumes and dress of the multicultural populace of Bombay.

On February 27, 1880, the ceremony opening the university building was held. The area around the Rampart Road had changed considerably during the past ten years. Besides the new university buildings, the High Court Building, the General Post Office, and the Public Works

Building now graced the campus environs. The university ceremony prominently featured scientific exhibits because the University of Bombay had recently decided to offer a bachelor of sciences degree (first conferred in 1882). Exhibits included coral reef specimens, microscopes with blood samples, specimens of plants, and an electric light. Drawings illustrated new nineteenth-century inventions such as the microphone, the phonograph, and the telephone.

In 1883 the University of Bombay decided to admit women. The issue had first been raised in 1875 when Post Master Kharsedji inquired whether his daughter, Phiroze Sorabji, could appear for the matriculation examination. The syndicate replied that no provision had been made to admit women when the university had been incorporated. However, the issue was not forgotten. In 1878, London University became the first British university to admit women. The syndicate reconsidered, and in 1883 Chancellor Sir James Ferguson stated, "Their intellects are as acute, their power of assimilating knowledge as great and means of usefulness open to them by the acquisition of knowledge not inferior to those of men." Cornelia Sorabjee was admitted to Deccan College of Poona and became the first female graduate of the University of Bombay in 1888.

Tragedy struck the university campus when the bodies of two young women were found at the base of the Rajabai Tower on April 25, 1891. According to the coroner, 16-year-old Pherozebi Sorabji Kamden and 20-year-old Bachubai Ardeshir Godrej had died by being thrown from the top of the tower. A suspect was arrested, then acquitted by the Bombay High Court due to lack of evidence. Rewards were offered for information, and rumors circulated that there was a second suspect who was from a socially prominent family. The case was eventually closed and the murders never solved.

Changes were gradually made in the curriculum. The creation of the faculty of science in 1879 made the University of Bombay the first Indian university to offer a science degree. In 1887 French was recognized as a second language, and in 1892 the course leading to the B.A. degree was extended from three to four years. Kashinath Trimbak Telang, who became the first Indian vice chancellor of the university in 1893, was instrumental in these changes. His death at the age of 43 in 1894 led to a debate about Hindus and education. In a convocation address in 1894 Dr. Ramkrishna Bhandarkar discussed the high mortality rate among Hindi graduates. Also shaken by Telang's death was Mahadev G. Ranade. Speaking to the Bombay Graduates Association that same year, he argued that Hindi poverty and the competitiveness of the university system contributed to this death rate.

By the turn of the century the University of Bombay was still functioning under the 1857 constitution. Reform was imperative. The university now had 11 colleges affiliated with its program and over 4,000 candidates for matriculation. The Universities Act of 1904 affected all

the universities in India. Its attempt to reform higher education in India received both criticism and praise. The act, the result of a two-year commission study, put all the universities under government control. It was disliked because it placed limits on the number of people in the senate and syndicate and controlled the approval of colleges affiliated with the universities. Supporters argued it made the universities teaching institutions as well as examining boards and provided assistance for teaching positions and equipment. The annual grant the university received from the government was Rs. 15,000, hardly enough to make it a teaching institution. In 1912 the government of Bombay's generous offer of an annual grant of Rs. 45,000 opened a new era for the university.

With this money lecturers from affiliated colleges were brought to the university to lecture M.A. students. Professors from Europe and the United States were invited to be guest lecturers and the role of the university library was expanded. Newly established research grants promoted publishing.

With facilities at the University of Bombay inadequate by 1914, consulting architect to the Bombay government, George Wittet, worked with the senate to design new buildings. Two buildings were to be constructed to the north and south of the university gardens. Although they were to be completed by 1920, financial difficulties caused numerous delays. The south wing was completed in 1922 at a cost of Rs. 450,000 and the schools of economics and sociology moved there in 1923. The north wing's eastern half was ready in 1923, but its western half was finished in 1937 for the Office of Registrar. With help from the government of India in 1952, the east wing was constructed for the new school of civics and politics.

Growing political unrest reached its peak in the 1940s, when students rallied to join Mohandas Gandhi's Quit India Movement in 1942. Students who participated in the freedom struggle were excused from class attendance provided they had recommendations from the principals of their schools. The university convocation, which was to be held on August 18, 1942, had to be postponed until February 10, 1943, due to political disturbances.

In 1947 India won its independence from British rule. Interestingly, this led to an increase in the number of women entering college. In 1930, 1,245 women were attending college. In 1951 and 1952 this number had increased to 9,167. That same year the country was divided into Pakistan and India, resulting in the displacement of persons from both countries. The University of Bombay sought to accommodate Indians migrating from Sind and Punjab in Pakistan based on their Pakistani educational records.

Another effect of the division of India and Pakistan was the loss of jurisdiction of the university's affiliated colleges. In 1947 there were 79 schools affiliated with the University of Bombay. In 1955 this number shrank to 31. In 1962, following the liberation of Goa, the jurisdiction

of the university was increased to Union territory, and the number of affiliated colleges began to rise. By 1980, over 131 colleges were connected with the university with enrollments of over 100,000. In 1949 the matriculation examination had been abolished, due to the government-imposed Secondary School Certificate Examination Act, which was enacted in 1948. Also in 1949 the university set up its own printing press in the former Indian Air Training Corps hangar building, which had been used during World War II. The increasing need for its own press was due to the growing publications of the university, including the *Journal of the University of Bombay* and the *University Bulletin*.

The University of Bombay celebrated its centennial in 1957. On February 3, an enormous torchlight procession of over 10,000 students, alumni, and faculty headed down what had been the old ramparts and forts less than a century before and entered the university gardens past the flood lit Rajabai Tower. A new coat of arms was designed for the university in honor of the centennial: it includes the Rajabai Tower above an open book that represents learning, and the university motto written in Sanskrit ("The fruit of learning is character and righteous conduct").

However, all was not peaceful at the university. In July 1977, the employees union, representing the non-teaching employees at the university, went on strike for 17 days over demands to change the pay scale. The government agreed in principle with the strikers and they returned to work. A second strike, which began on December 14, 1977, lasted 53 days. Ultimately, the workers won their demand for an adjustment in their "Dearness Allowance" (an income supplement).

An ambitious expansion program initiated in the 1960s continues. In 1962 the rector of the University of Bombay, Professor G.D. Parikh, envisioned a utopian campus with room to grow. It would contain a new university library, buildings for individual departments, a botanical garden, a herbarium, and a zoo. In 1966 the university acquired 231 acres in the village of Kole-Kaylan. When the government red tape finally cleared in 1969, construction costs had risen. On March 9, the cornerstone for the new science building was laid, and the building was ready for occupation in 1971. Progress was slow but continued and the Humanities Building was ready the following year, then the library in 1976. Work continued on the Kalina campus through the 1980s with many buildings yet to be added.

The two main libraries, the Rajabai Clock Tower Library and the Nehru Library on the Kalina Campus, hold over 600,000 books and journals. The Tower Library holds many old documents, including over 1,200 manuscripts on Islamic theology and Zoroastrianism, illuminated manuscripts in the Marathi language, and the diaries and personal records of old Bombay families. The Nehru Library, in contrast, has the most recent books in the sciences and social sciences.

The university has a long list of outstanding graduates who have made major contributions to Indian life and culture. They include: Mithan Tata, who became the first Indian female lawyer in the 1920s; Dhondo Keshan Karve, a woman's rights activist who founded the Widow's Home in 1898 and established the Society for the Promotion of Widow Marriages; Pandurang Vaman Kane, whose works include the five-volume history of ancient Hindu scripture, *History of Dharmasastra*.

Further Reading: The centennial year produced two good biographies of the university. T.V. Chidambaran, the chair of the Souvenir Volume Committee, published *University of*

Bombay (1857–1957) Centenary Souvenir (Bombay: Bombay University Press, 1957), which contains photographs, reminiscences, and statistical information. S.R. Dongerkery, who was the Registrar of the University of Bombay, provides an exhaustive account of the university's history in *A History of the University of Bombay 1857–1957* (Bombay: Bombay University Press, 1957). University librarian Aroon Tikekar's *The Cloister's Pale: A Biography of the University of Bombay* (Bombay: Somaiya, 1984), which relies on Dongerkery's book, updates the history to the 1980s and provides many photographs, maps, and drawings.

—Patrice Kane

UNIVERSITY OF NORTH CAROLINA

(Chapel Hill, North Carolina, U.S.A.)

- Location:** Chapel Hill, North Carolina, about 24 miles east of Raleigh, North Carolina.
- Description:** A state university enrolling approximately 24,500 students in undergraduate, graduate, doctoral, and professional programs.
- Information:** Office of Undergraduate Admission
University of North Carolina at Chapel Hill
CB# 2200, Jackson Hall
Chapel Hill, NC 27599-2200
U.S.A.
(919) 966-3621
- Visiting:** Guided tours of the campus are available year round. For more information, call the phone number above.

According to legend, William R. Davie and a group of trustees set out one day in 1792 to find a suitable spot on which to build North Carolina's first state university. After an exhausting search, Davie and his companions sat down—possibly to rest from the summer heat—beneath a giant poplar near a hill known as New Hope Chapel. After they partook of “exhilarating beverages,” and a picnic lunch, followed by a nap, the group was convinced by Davie that there could not be a more beautiful spot for a university. A tree near the center of the university was christened “Davie Poplar” in the late nineteenth century by Cornelia Spencer, the daughter of a prominent university professor, in honor of the father of the university.

While the legend is appealing, the creation of the University of North Carolina at Chapel Hill, the nation's first public university, dates back to 1776 when the state's constitution was drafted. The constitution stated “one or more universities” were to be started with state support and instruction provided at “low prices.”

Before a university could be built, the Revolutionary War broke out and it was not until 1789 that the General Assembly chartered the University of North Carolina. Despite the charter, trustees were left to find money and land themselves. Davie, a state legislator who had pushed for the charter, took up the task of locating the university. He and 39 other trustees identified possible sites. In August 1792, 25 of the 40 trustees met to discuss several options. In the end, the group agreed to build the university within 15 miles of Cyprett's bridge in Chatham County. In December of the same year, the group's land

search committee chose New Hope Chapel Hill as the site. A central location and roads accessible to the eastern and western parts of the state played a role in the choice, but the site's selection was made in large measures because of the donation of more than 1,300 acres of land by 12 landowners. The land was to be used for the university and for firewood. As a token of gratitude, the trustees granted the donors the “respective privileges [*sic*] of having one student educated at the said university free from any expense of tuition.”

Four years after the charter was signed, Davie and the university's founding fathers watched on October 12, 1793, as the cornerstone of Old East, the nation's first public university building, was laid. The two-story brick building, which still stands and is listed as a National Historic Landmark, was first used as a dormitory, library, and classroom. Archibald Henderson, a UNC alumnus and mathematics professor, described Old East's architectural design in his 1940 book, *The Campus of the First State University*. John Conroy drew up the building's original design which

indicates a preoccupation with Oriental ideas in consonance with Moslem *mores*. In the East it was customary to bury the dead with head directed toward the east, to face toward the east in crying the *muezzin* (call to prayer) and to build temples and mausoleums fronting toward the rising sun.

Henderson speculated that the building's Orientalization had its beginnings with the Masonic Order, and that Conroy's design may have been influenced by Davie who became North Carolina's Grand Master of Masons in 1792. In 1822, a third story was added to the building, and it was lengthened to its present-day size sometime between 1845 and 1848. While it was first used for multiple purposes, as the university grew its sole purpose became that of a dormitory. It was closed in 1991 for a two-year renovation to celebrate the university's bicentennial.

Today, Old East remains a men's dormitory across the street from South Building—which houses the chancellor's office. Old East is one of 30 dorms and 151 major buildings on the 792-acre campus.

When Old East, then known as East Building, was finished in 1795 it was the only structure on campus for two years. Person Hall, long used as the chapel, was the next structure to be built, and the cornerstone for Main, now known as South Building, was laid in 1798; the building was not completed until 1814.



University of North Carolina

When the university opened its doors on January 15, 1795, it had no president or students. The Reverend David Ker, a Presbyterian preacher had been chosen as the first presiding professor the year before, but it would be ten more years before Joseph Caldwell was named its first president. The lack of students was resolved a month later when Hinton James arrived from Wilmington, North Carolina, on February 12. Today, a ten-story dormitory is named in his honor. By March, there were 40 more students. The university remained the only institution of higher learning in the state until 1837 when Davidson College was founded.

Before the Revolutionary War began, there had been nine colleges in the 13 colonies. All but one, the College of Philadelphia, were sectarian. Davie, who was brought up a Calvinist and was urged by his uncle to join the ministry, seemed opposed to having a religious leader at the helm. But when at least six of the seven nominees for presiding professor were ministers, he had no choice but to accept Ker's appointment. While Davie failed in securing a secular leader, he did convince leaders to offer science courses along with the classics. Science, English, and history made up the core courses of study, with the classics being offered as electives. In addition to philosophy, the

languages, mathematics, and history, students were offered courses in chemistry, astronomy, geography, philosophy of medicine, and agriculture and mechanics. For the first several years, students could receive a bachelor of arts degree. In 1875 a bachelor of sciences was added, and a year later graduate-level courses were offered for the first time. Three years later the university began providing courses in pharmacy and medical studies.

Along with strict academic requirements, the first university students also had to attend sunrise and evening prayers and Sunday religious services and adhere to stringent rules for student behavior. Monitors were appointed to make sure no students used profane language, gambled, or spoke ill of religion. Those who disobeyed the rules faced punishment, usually a suspension that ranged from two weeks to six months. Despite the strict rules, it was known widely that many students gambled, remained unruly, and threatened professors. These problems climaxed in 1799, when students rioted against campus regulations and against presiding professor James Gillaspie, who had become obnoxious to them. The students beat Gillaspie and stoned and threatened other faculty members. When the riot was over, about 35 of the university's 115 students withdrew, many promising never to return.

Students finally took control of monitoring their behavior 76 years after the riot. In 1875 the university adopted a student honor system. Students elected others from among themselves to try cases involving cheating and other infractions the faculty and trustees had overseen before. Each student was required to sign a pledge stating he had neither given nor received aid during an examination. The system has survived for nearly 120 years, even when, in 1936, a widespread cheating ring involving many prominent student leaders was discovered to have been in existence for two years. Franklin Graham, university president at the time, told the student council, "The honor code belongs to the students. It is your responsibility. Blow the lid off it if you have to, but get to the bottom of it." When the investigation was completed, more than 100 students were expelled, including most of one fraternity.

With the 1799 riot, Gillaspie resigned and Joseph Caldwell assumed the university's reins again, at the request of the students. Caldwell had replaced Ker in 1796, but he had given up the position of presiding professor six months after assuming the job, remaining on the faculty as a professor of mathematics. His second tenure as head of the university lasted much longer, culminating in 1804 with his appointment as the first president of the university.

With Davie retiring to his South Carolina plantation, Caldwell assumed an even greater role in guiding the university. He moved to restore the classic curriculum making Latin and Greek required subjects. In 1812 he withdrew as president and resumed his professorship in mathematics, only to return to the presidency four years later, the same year the university conferred an honorary degree on him.

During the early nineteenth century, the university's appearance began to take shape. Main Building was completed in 1814 and housed two literary societies, boarding rooms, and classrooms. Old West, designed as the sister building of Old East, was completed in 1823. In addition, stone walls were constructed along many paths by piling field stones together. Similar stone walls remain a centerpiece of the campus.

Shortly after Caldwell's death in 1835, a monument was created in his honor on the north side of campus. It was replaced in 1858 by a new marble obelisk, on the site where Caldwell, his wife, and her son from a previous marriage, Professor William Hooper, are buried. Caldwell Monument is part of a unique designing quirk that has several buildings and monuments located in a straight line through the longitudinal center of campus. Also part of this unique symmetry are Davie Poplar; Silent Sam, a bronze statue erected in 1913 to honor Confederate soldiers; Old Well, a university symbol that had been a primary source of water; South Building; Wilson Library, which was completed in 1929; and the Bell Tower, which was finished in 1931 and stands 167 feet tall and contains a dozen bells ranging in size from 300 pounds to 3,500 pounds.

In the late spring of 1847, a current of excitement ran through Chapel Hill as a U.S. president visited the campus for the first time. It was not President James K. Polk's first trip to the university, since he was born in Mecklenburg County, North Carolina, and had graduated from Carolina in 1818, where he earned first honors both in mathematics and in the classics and finished first in his class. The campus was given a facelift for his visit, with a coat of tan wash applied to the buildings. At the chapel, Gerrard Hall, which had been enlarged for his visit, he was welcomed by the president of the university, David Lowry Swain. Over the next two days, Polk renewed acquaintance with the campus. Accompanied by college friends he strolled past the buildings of his youth, and with his wife returned to his old dorm room on the third floor of South Building.

As momentous as Polk's visit was to the campus, less than 15 years later scores of Carolina graduates and students would take part in a war against the nation Polk had led. During the Civil War, the university was one of only two Southern universities to remain open, but students and faculty were few. The university's fortune became graver when Swain, a former governor of North Carolina, was thrust forward to meet General William Tecumseh Sherman to discuss terms of surrender for Raleigh, the state's capital. During that meeting with Sherman, an old correspondent and former college president, Swain was assured the university and its property would be safeguarded.

On April 17, 1865, Sherman's forces entered the village with a handsome 30-year-old general, Smith B. Atkins, at their head. Two days later, Atkins called upon Swain, and there encountered the president's 21-year-old daughter, Ellie Swain. It was love at first sight for both, which meant hard times for Swain, who, some said, was consorting with Union soldiers. The Union brigadier made Ellie Swain a present of a spirited riding horse, and every evening he dispatched the regimental band to Swain's house to serenade her. In three weeks, Ellie was engaged to the enemy commander who was occupying the town; in four months, they were married. So incensed were Confederate loyalists that Cornelia Spencer (a nineteenth-century professor's daughter) noted in her diary, "[wedding] invitations were spat upon in one or two houses."

This episode set the stage for the next visit by an American president, since Swain, despite his loss of popularity, still held office when Andrew Johnson came to Chapel Hill in 1867. Johnson, once viewed in the South as a renegade, had redeemed himself with his native section by the time he arrived in Chapel Hill in 1867 by vetoing the Reconstruction Acts, though his veto had been overridden by Congress and military rule imposed. A few years earlier, the University of North Carolina had the largest enrollment of any college or university in the United States except Yale. But when President Johnson and his party attended the 1867 commencement, the num-

ber of “distinguished guests” seated on the stage of Gerard Hall outnumbered the graduating class, a total of only 11. After Johnson’s visit, the reconstruction governor removed Swain as president of the university in 1868. Not many days later, the horse General Sherman had given Swain as a present bolted, hurling him to the ground, and he died shortly thereafter.

While the Civil War shut many universities, that fate did not befall the University of North Carolina until 1870, when ■ shortage of students forced its closure. It remained closed until 1875 when Mrs. Spencer and others pressed for its reopening. She wrote a series of scathing articles in North Carolina publications blasting those who had forced its closure. Her writings and work are credited with the reopening of the university. When she received word in March 1875 that the university would open again she gathered a group of friends and went to the attic of South Building, then in shambles, and rang the bell to sound the news.

By the time of its centennial celebration, the university had been renovated and refurbished. It was still a small school, not yet considered among the elite institutions of higher learning in the nation. As the twentieth century neared, major changes began to occur. In 1897, Mary McRae was the first of five women to enroll in the university; a year later Sallie Walker Stockard became the first woman to earn a degree from it. The university was awarded North Carolina’s first chapter of Phi Beta Kappa (the national scholarship fraternity) and James Horner Winston became its first Rhodes Scholar. A milestone occurred in 1915 when the university’s enrollment topped 1,000 for the first time. By 1930, enrollment had risen to 2,600 students.

Other social changes came later. Like many universities across the country, the school was forced to desegregate in the 1950s. In 1952, Harvey Beech, who earned a law degree, became the first black man to graduate from the university. However, in 1955 when a federal court ordered that admission requests be processed without regard to race and color, the university appealed the decision. The appeal failed, and in 1959 three black men from Durham—brothers Leroy and Ralph Frasier and John Brandon—became the first blacks to earn undergraduate

degrees. Blyden Jackson became the first black full professor at the University of North Carolina-Chapel Hill. While the university is more diverse than ever, with women making up 58 percent of the students and blacks about 10 percent, struggles continue.

By 1993, the university’s bicentennial, its reputation had grown internationally, as *U.S. News and World Report’s* survey of American colleges has consistently ranked it among the best colleges in the nation and among the best research universities. One man who single-handedly brought fame to the university was basketball star Michael Jordan, who enrolled as a freshman in 1982. On October 12, 1993, when President Bill Clinton delivered the University Day speech, he became the fifth U.S. president to speak at the campus. Even on a campus that regularly features protests and performers, this was a banner day—including flags from 80 of North Carolina’s 100 counties and 100 seedlings from Davie Poplar Jr. given to 100 students from North Carolina’s 100 counties.

On the 32nd anniversary of President John F. Kennedy’s University Day speech, President Bill Clinton spoke of the university’s founders: “Tonight, we honor this university’s heroic builders and believers. We meet as their heirs a dozen generations after our nation and this university were founded—and we meet at another moment of change.”

Further Reading: William Snider’s *Light on the Hill* (Chapel Hill: University of North Carolina Press, 1992) offers a lengthy account of the university from its founding until the late 1980s. Kemp Battle’s two-volume account of the *History of the University of North Carolina* (Spartanburg, South Carolina: The Reprint Company, 1974) gives an extensive view of the university from 1789 until 1912. Albert Coates provides a more personal view of the university in *A Magic Gulf Stream in the Life of North Carolina* (Chapel Hill: University of North Carolina Press, 1978). A pictorial and written history can be found in William Powell’s *The First State University* (3rd edition, Chapel Hill: University of North Carolina Press, 1992).

—J. Cameron Tew

UNIVERSITY OF NOTRE DAME

(Notre Dame, Indiana, U.S.A.)

Location: The University of Notre Dame is located in the midwest region of the United States at Notre Dame, Indiana, adjacent to the city of South Bend, Indiana, and approximately 90 miles southeast of Chicago, Illinois.

Description: The University of Notre Dame was founded in 1842 by Father Edward Sorin, ■ priest of the Congregation of the Holy Cross. Chartered by the state of Indiana in 1844, the university was governed by the Holy Cross order of the Catholic Church until 1967, when governance was transferred to a predominantly lay board of trustees. At present, the university is an independent, national Catholic university with a student body of 10,500. The university programs include extensive undergraduate and graduate studies, as well as a law school and a business school. Notre Dame has earned world renown for its achievements in intercollegiate football.

Information: University of Notre Dame
Public Relations and Information
317 Main Building
Notre Dame, IN
U.S.A.
(219) 631-7367
Fax (219) 631-8212

Father Edward Sorin, ■ Catholic priest and missionary, arrived at the present site of Notre Dame University on a cold, winter day in November 1842. With him were four of his fellow brethren of the order of the Congregation of the Holy Cross (CSC). Sorin, the religious superior and advisor of these men, had been granted the church-owned land (totaling 524 acres) with the stipulation that he build ■ religious novitiate and ■ college within two years. Under frontier conditions Sorin and his small group fulfilled the agreement; by December 1844 the Notre Dame community encompassed five buildings, including the Main Building, the novitiate, and a chapel. Sorin began accepting pupils in 1843, and in 1844 John D. Defrees, a South Bend attorney and state senator, secured a comprehensive charter of incorporation for the school as a degree-granting university from the Indiana legislature.

In the early decades, the Main Building comprised the entire University of Notre Dame. Its rooms served both as classroom and dormitory space. All boys and young men

who applied for admission were accepted. Tuition for education and for room and board (all students boarded) was rarely fulfilled with cash, but more frequently through trade of goods (such as pigs or cows) or through physical labor (one boy's father, a carpenter, agreed to build the church steeple). The school included three levels of instruction: the Minim Department, the Junior Department, and the Senior Department. The Minim Department taught the youngest boys elementary arithmetic, reading, grammar, and history. The Junior Department, a college preparatory division, taught Latin, Greek, English, history, and composition. The curricula of the Senior Department, the collegiate division, consisted of four years of humanities, poetry, rhetoric, philosophy, modern languages (French, German, Spanish, or Italian), music, and drawing. In the early decades, the Senior Department never attracted more than a dozen students yearly. The needs of local families during this period largely precluded schooling in anything except the essentials. Sorin's main desire was for the school to instruct young men to be good, Catholic citizens. Although his vision included the development of the collegiate division, the development of the preparatory divisions fulfilled both his desires and the needs of the larger community during this era.

When Sorin founded Notre Dame, he founded a frontier colony. With little capital and meager resources, Sorin developed Notre Dame into a self-sufficient community. He and the members of his community erected the first buildings and farmed the land. Within two years of their arrival, 120 acres of wheat, potatoes, and corn were under cultivation. The Notre Dame farm buildings grew to include an ice house, a pigsty, ■ slaughterhouse, ■ cow barn, a hay barn, ■ sugar house, a horse shed, a wagon shed, and a tool house. Notre Dame produced their own lime and brick beginning in 1843, using the rich marl deposits in the soil. The yellow brick, used in all early buildings and known commonly as "Notre Dame brick," made Notre Dame's campus distinctive and brought in revenue on the market. Sorin invited Sisters of the Holy Cross to the community in 1843 who assumed many of the domestic tasks of the institution. A manual labor school taught orphans and other poor children trades such as carpentry and leather working. Sorin channeled his energies, not solely to the development of the University of Notre Dame, but to the development of an entire community.

Under Sorin's direction the school grew both in numbers and in quality. In 1844, Notre Dame consisted of five buildings, eight faculty and 25 students. Nearly 50 years



University of Notre Dame

later, in 1893, Notre Dame had grown to include 24 buildings, a faculty of 52, and a student body of 542. The University of Notre Dame had six presidents between 1842 and 1893: Father Edward Sorin (1842–65), Father Patrick Dillon (1865–66), Father William Corby (1866–72), Father August Lemonnier (1872–74), Father Patrick J. Colovin (1874–77), Father William Corby in a second term (1877–81), and Father Thomas Walsh (1881–93). However, the real authority during this time was Sorin; upon relinquishing his post as president, he retained authority over the community as Provincial of the Congregation of the Holy Cross in Indiana and later as Superior-General of the CSC in Europe and in the Americas. Sorin's vision made possible the magnificent Sacred Heart Church, with its 42 large, stained-glass windows

and elaborate frescoes painted by the Italian artist Luigi Gregori, constructed between 1871 and 1888. When the school's Main Building burned to the ground in 1879, a tragedy which destroyed the entire school, Sorin's determination to rebuild bigger and better than before led the school in its rapid recovery. Sorin dedicated a large portion of his time and energy to found Notre Dame and continued to guide its development until his death in 1893.

The quality and popularity of college instruction advanced slowly. Under Father Walsh (1881–93), civil and mechanical engineering became regular four-year courses. Walsh procured the services of notable lay faculty, including Maurice Francis Egan (a poet and novelist reputable in U.S. Catholic circles) in literature, Albert Zahm (an influential pioneer of flight aerodynamics) in

the sciences, and William Hoynes (a lawyer, an inspirational professor, and an excellent administrator) in law. Father Andrew Morrissey (1893–1905) revised and elaborated the college curriculum, raised the entrance requirements, and expanded the physical plant of the campus to accommodate more students. An average of 30 bachelors degrees were conferred per year during Morrissey's presidency, along with several masters. Father John W. Cavanaugh (1905–19) recognized the need for additional faculty, laboratories, professorships, and scholarships, and for an adequate library. He commissioned a building plan from architect Francis Kervik and witnessed the completion of the Lemonnier Library in 1917.

The 1920s were a definitive period for the university. James A. Burns (1919–22), the first university president with a doctorate, improved academic standards, restructured the administration, and strengthened financial support. He recruited faculty with doctorates and standardized college entrance and graduation requirements. He divided the university into five colleges—arts and letters, science, engineering, law, and commerce—assigning a dean and several department heads to each. When Burns came to the presidency, the preparatory divisions had accounted for nearly half of the total student body. With increasing enrollment (due in part to the post–World War I college boom), the presence of preps meant the rejection of college applicants due to a lack of dormitory space. Burns summarily did away with the first two years of the preparatory school, illustrating the new dedication of Notre Dame to the development of their collegiate division. Burns also contributed greatly to the financial status of the institution, bolstering the school's endowment with support from the General Education Board of the Rockefeller Foundation (\$250,000) and the Carnegie Foundation (\$75,000). Before 1921, the school's endowment never surpassed \$100,000. With Rockefeller and Carnegie Foundation support, Burns instigated a \$2 million endowment drive which he continued to direct after the completion of his presidential term.

Also during the 1920s, Notre Dame acquired national fame for its football program. Notre Dame's intercollegiate football career began inauspiciously in 1887, when they lost 0 to 8 to the University of Michigan. For the next 25 years, Notre Dame lost money on their football program. Football began producing revenue only in 1913, when Notre Dame upset Army 35 to 13. Knute Kenneth Rockne, captain of this winning football team, returned to Notre Dame football as full-time coach in 1918 and proceeded to place Notre Dame in the national news. He coached the team until his death in 1931, winning 105 games, losing 12, and tying 5. Rockne's flamboyant side-line manner and performance, his knowledge of football strategy, and his ability to motivate young men to extraordinary performance made him a fascinating persona for the growing numbers of sports fans. During this time period, football (and baseball)

acquired an unprecedented following, as individuals of all ages across the nation attended games and followed the successes and failures of their favorite team. It was Notre Dame's good fortune to acquire a number of superstars, in addition to Rockne, during the 1920s. For three years, a handsome George Gipp led Rockne's team in rushing, passing, and scoring; his untimely death in December 1920 led to the inspirational saying, "Win one for the Gipper." Rockne's 1924 team, which had a brilliant backfield known as the Four Horsemen in reference to the four biblical plagues of the apocalypse, took Notre Dame to the Rose Bowl. Throughout the decade, the team brought additional revenue to the school and placed Notre Dame in the public eye, attracting greater numbers of students and thereby furthering the growth of the college.

Football revenue, along with the funds acquired by President Burns, enabled his successors, Father Matthew J. Walsh (1922–28), Father Charles O'Donnell (1928–34), and Father John F. O'Hara (1934–40), to expend over \$5 million on campus construction. Increased admissions had led to a campus housing shortage; the 1,000 students living in South Bend in 1922 represented a financial loss to Notre Dame and compromised the traditional residential atmosphere of the campus. Father Matthew Walsh alleviated the housing shortage with the construction of two temporary residences (Freshman Hall, 1922; and Sophomore Hall, 1923) and three permanent residences (Howard Hall, 1924; Lyons Hall, 1925; and Morrissey Hall, 1925). In addition to providing rooms for over 900 students, Walsh also placed a limit of 2,500 on enrollment. Father Charles O'Donnell provided more needed space when he ended the Minim program in 1929, and St. Edward's Hall became a dorm for 200 college men. The following year, a new football stadium (seating 59,074) graced the campus, a testament to both the glory of and the money in Notre Dame football. O'Donnell and his successor, Father John O'Hara, oversaw the further extension of the school's campus with the construction of a new power plant, water tower, infirmary, and three additional residence buildings (Cavanaugh Hall, Zahm Hall, and Breen-Phillips Hall).

The increasing revenue of the 1920s not only allowed for building projects but also created growth opportunities for the university's academic program. Although the Great Depression did affect the university's enrollment, Notre Dame neither cut salaries nor laid off faculty. In fact, the school managed to strengthen its academic programs. By the early 1930s Notre Dame had abandoned its grade, preparatory, and vocational schools and was concentrating on upgrading its undergraduate and recently founded graduate programs. Although Notre Dame had awarded masters of arts degrees throughout its history, its formal graduate school was not established until 1932. Respectability for a professor in American higher education largely demanded separation of religious and aca-

demic thought, as well as the possession of advanced degrees. For this reason, Notre Dame had recruited increasing numbers of degreed laymen to the faculty. In 1932 laymen outnumbered clerics nearly three to one; 20 lay professors possessed doctorates; 40 possessed masters. These numbers represent ■ profound divergence from tradition for an institution initially comprised solely of brothers, sisters, and priests of the Catholic religion; they also represent the school's aspirations to become a first-rate university.

The 1940s marked the return of high student enrollment, football success, and active presidential efforts to strengthen university status. After World War II, with 1.5 million veterans enrolling in American colleges on the G.I. bill, Notre Dame's student body increased dramatically. Veterans entered Notre Dame academics and athletics both as students and staff, including Frank W. Leahy as football coach. Leahy coached six unbeaten teams between 1941 and 1953, recruiting hardened veterans as players and earning a winning streak of 39 games. The graduate school also flourished after the war, with the acquisition of refugee scholars of war-torn Europe. Their emigration to the United States strengthened academic inquiry at Notre Dame and in numerous institutions of American higher education. Father John Cavanaugh (1946–52) built upon the postwar increase in students and faculty, increasing fund-raising efforts and strengthening the academic program. Cavanaugh created the Notre Dame Foundation in 1947, the first permanent university endowment, and carried the needs of the school to the American Council on Education and the Ford Foundation. He upgraded the quality of academics, emphasizing advanced studies and research and authorizing the construction of LOBUND (Labs of Bacteria at the University of Notre Dame). These labs have played a significant role in bone-marrow treatment for leukemia and Hodgkins disease.

Father Theodore Hesburgh accepted the presidency in 1952, determined to bring Notre Dame status as a great institution of higher learning. In a dynamic, 35-year presidency, Father Hesburgh secured a prominent place for Notre Dame in society and in academia. Hesburgh himself gained international renown through his academic, ecclesiastical, and civic duties (participating in numerous national academic and government agencies and serving on the boards of elite financial institutions). Hesburgh's goals for the university included building a first-rate undergraduate school, upgrading the graduate school, and reorganizing the institution as a modern university. He reformed the curricula and enforced tougher admissions requirements. He recruited visiting lecturers and permanent faculty of national academic standing. In 1960, the Ford Foundation selected Notre Dame as one of six rapidly improving universities to receive a grant of \$6 million, if an additional \$12 million could be raised from other sources within three years. This effort pro-

vided funds for the 14-story Memorial Library built between 1961 and 1963, a building that towers over the rest of the campus. Its 132-foot mosaic of Christ the Teacher symbolizes both Notre Dame's religious affiliation and its quest for academic greatness. Another campaign between 1967 and 1972 secured an additional \$62 million, which endowed distinguished professorships, expanded graduate education, and provided minority scholarships and student loans. During Hesburgh's presidency, Notre Dame's enrollment, faculty, and the number of degrees awarded all doubled, the number of library volumes increased 5-fold, the endowment rose from under \$10 million to over \$400 million, its physical facilities grew from 48 to 88 buildings, its faculty compensation increased 10-fold and its research funding, more than 20-fold.

Hesburgh oversaw an era of astronomical growth for the University of Notre Dame. He also oversaw two notable changes in the structure of the university: the transference of university ownership to a predominantly lay board of trustees, and the admission of women. In 1967, the CSC community relinquished ownership of the university. Ties between the university and its founding order of the Catholic Church had grown weak during the past few decades. Of over 700 faculty members, only 55 were CSC priests or brothers. In addition, most of the university's \$30 million operating budget came from secular sources. It had become increasingly clear to Hesburgh that the pursuit and realization of long-term fund-raising goals depended upon the assumption of ■ lay-oriented power structure. The CSC community relinquished ownership with the stipulation that Notre Dame's president continue to be a CSC priest and that Notre Dame's character as a Catholic institution of higher learning would not be abandoned without the approval of a joint committee composed equally of CSC priests and laymen. Regardless, the transference of ownership exemplified a serious break with tradition. With the acceptance of women five years later, the university accepted the characteristics of most modern American universities.

The university has continued to grow under the leadership of Father Edward A. Malloy (1987–present). The university is organized into four undergraduate colleges (arts and letters, science, engineering, and business administration), two schools (the law school and graduate school), and numerous research institutes. Admission is highly competitive, with five applicants for each freshman class position. The quality of undergraduate programs is evidenced in the success of its graduates in post-baccalaureate studies; Notre Dame ranks 18 among private universities in the number of doctorates earned by its undergraduate alumni. The graduate school, which encompasses 38 master's and 24 doctoral degree programs in 27 university departments and institutes, ranks among the nation's top 50 universities in number of doctorates awarded annually. Notre Dame's faculty continue

to gain academic recognition; Notre Dame ranks in the top ten nationally among private universities in the number of National Endowment for the Humanities fellowships won by its faculty since 1985. The faculty, students, and academic capabilities of Notre Dame today, coupled with a history of religious and national football glory, make the school a notable university.

Further Reading: For general histories of the University of Notre Dame, see Arthur J. Hope's *Notre Dame: One Hundred Years* (Notre Dame, Indiana: University of Notre Dame Press, 1943), and Thomas J. Schlereth's *The University of Notre Dame: A Portrait of Its History and Campus* (Notre Dame, Indiana: University of Notre Dame Press, 1976).

—Beth Rillema

UNIVERSITY OF ORLÉANS

(Orléans, France)

Location: Orléans, in the central region of France on the banks of the Loire river, north of Paris.

Description: A state-run university established in 1970 as part of reforms of the French system of higher education in 1968. It serves the central region of France in four areas: letters and social sciences; law, economy, and management; applied sciences; and technology, energy, and materials.

Information: Château de la Source
BP 6749
45067 Orléans Cedex 2
France
(38) 41 71 71

Modern French universities such as the University of Orléans were created in the aftermath of the social and political upheavals of May 1968. The French university system differs greatly from the North American system. In France, every student who graduates with a *baccalauréat* (school-learning certificate) has a guaranteed right to register at an institution of higher learning. Some institutions called the *grandes écoles* limit their admission by competitive entrance examinations (*concours*). The vast majority of French 18- and 19-year-olds who exercise this right enter a *université* rather than undertake the special two-year preparatory courses which would be required to enter the *grandes écoles*. Since it was founded in 1971, the University of Orléans has been restructured and reorganized along the lines proposed by the Ministry of National Education while still maintaining its own autonomy and multidisciplinary approach.

The present University of Orléans was named after a medieval university that had existed from the ninth to eighteenth centuries but the current university has no direct connection with its medieval namesake. The medieval institution was renowned for its faculty of law, where Pope Clement V (1305–14) studied, but it was abolished during the French Revolution. Orléans and the central region of France would not have another university or institution of higher learning until the 1960s for higher education was to be consolidated and concentrated in Paris.

As he was for many aspects of modern French society, Napoléon was largely responsible for the French educational system. The traditional humanist ideal of

universities dealing with the whole of human knowledge was replaced with his own concept of an imperial university. The university implied the entire educational system—primary schools, *lycées* (secondary schools), and faculties. Even the term *faculté* does not correspond to the North American understanding of the word. The 100 or so faculties which existed in nineteenth-century France were not associated with an independent institution but were grouped into academies, regional administrative structures that were under the control of the central educational authority. Poorly funded and staffed, they provided training for the *baccalauréat* (school-leaving certificate) or the *licence* (teacher's diploma). Professional and more advanced instruction was provided in one of the more prestigious *grandes écoles*.

Universities did not regain any status until 15 were created in 1896. They still lingered under the disadvantages of the nineteenth century. They were little more than a loose association of faculties grouped together as administrative bodies. There was little, if any, communication between disciplines and institutions despite the fact that most of them were concentrated in Paris, with decision making in the hands of the Ministry of National Education. However, individual professors could affect substantially a student's career, because they had the power to determine their own teaching and evaluating methods. These problems continued to plague the French educational system well into the twentieth century. In spite of repeated calls for restructuring and updating of the entire system, such reforms were not forthcoming until student protests, caused in large part by serious overcrowding and high drop-out rates, forced the government to redesign radically the French university system.

The Fifth Republic was declared in October 1958 amid an atmosphere of educational reform. A succession of ministers of education introduced a number of measures aimed at dealing with the increasing problem of overcrowding in the Parisian universities. New academies were created in the outlying regions of the capital, including Orléans, in 1962 by Charles de Gaulle's Minister of National Education, Christian Fouchet. These institutions resembled their Parisian counterparts and suffered from the same organizational problems. Fouchet, however, did introduce some modest changes to the awarding of degrees. A two-year course was to constitute the first phase of higher education. Upon completion, a student would be awarded a diploma in science or in arts; any further education would have to follow the discipline chosen in the first phase. An additional year led to the *licence* (equivalent to a bachelor's degree) and a four-year course



University of Orléans

to a master's degree which was a mandatory qualification for all secondary teachers.

In response to criticism from businessmen that graduates (more often than not from faculties of law or letters) were insufficiently trained to meet industry's needs, Fouchet announced the creation of new institutes of technology (Institut Universitaire de Technologie—IUT) in October 1966. They were to provide a two-year practical course in preparation for industrial and commercial careers. Unlike the universities, they were given the right to select and limit admission based on academic records. Students who completed the course were given diplomas (Diplôme Université Technologie). Fouchet hoped that by reducing the first degree to two years, many students would complete their studies and enter the work force, but changes in the French economy in the 1960s made further education a prerequisite for finding work. The number of students quickly doubled from 1964 to 1968. The entire university system was overrun by a new generation of French students exercising their right to a free education.

The first student disturbances were at Nanterre, a bleak university campus on the outskirts of Paris. Desolate, ill-equipped, and severely overcrowded as it was, students often could not get into the halls to attend lec-

tures. Many chose simply to abandon their studies rather than study in such conditions, often at the expense of getting a good job. On March 22, 1968, 100 students occupied the university campus buildings at Nanterre to protest conditions.

Students throughout France were ripe for revolt. They were concerned about job prospects. There was a huge imbalance of students in the faculties of letters and law. With most graduates only trained for teaching, few could find careers in industry and commerce. Nearly half of the students in law and over a third in letters failed their first-year examinations. Only one third of students in France's universities were in the sciences and well over half failed their examinations. The drop-out rate among the sciences was almost 50 percent higher than that rate in letters.

Students blamed these failures on study conditions, teaching methods, and the curricula. They demanded more teachers and better teaching methods. Student/teacher ratios were significantly higher than in any other industrial country. Professors were seen as too authoritarian. Students accused them of paying more attention to research than to teaching. In France, the way to promotion lay through publication rather than by attending to students. Nonetheless, professors exercised an almost

absolute control over their courses. Nor were the students pleased with the Fouchet reforms. They saw the new institutes and changes in degrees as little more than measures devised to meet industry's need for workers. They accused the new institutes of technology of producing second-rate degrees that led to mediocre dead-end jobs, while the promising careers were reserved for the graduates of the *grandes écoles*.

The unrest that started at Nanterre quickly spread. In May, police action against a meeting of sympathetic students at the Sorbonne touched off rioting. A strike by the Union nationale des étudiants de France (UNEF) was supported by the teachers' union and the all-powerful car workers at Renault. Both Prime Minister Georges Pompidou and President Charles de Gaulle were forced to cut short foreign visits to rush back and deal with the growing crisis. The protests quickly lost momentum as first the auto workers and later teachers were appeased with new collective agreements. As for the students, the de Gaulle government promised a commission which would study the question of reforms to the French educational system with particular emphasis on the student demands for more autonomy, participation, and interdisciplinarity.

In the aftermath of the student unrest, a commission studied the fundamental issues of curriculum, the organization of *facultés*, and the role universities were to play in French society. From this review new parliamentary legislation emerged that would mark a new and dramatic phase in the history of the French university. In November 1968, de Gaulle's Minister of National Education, Edgar Faure, introduced *La Loi d'orientation de l'enseignement supérieur*. The 100 or so faculties in existence were to be reorganized into 71 new universities and smaller university centers. The old faculty system was abolished, although the administrative structure of 23 academies was maintained. Each discipline was to be subdivided into *unités d'enseignement et de recherche* (UERs) which would correspond to a traditional faculty. The UER was to link teaching with research in order to develop the student's full potential.

The law also sought to meet the students' demand for more autonomy. Each university was given the authority to determine its own internal structure and to administer itself. The universities were to be run by committees or councils made up of elected representatives. The students, administrators, teachers, and support staff all had the right to vote. The highest elected body, the *conseil d'université*, was to include a number of prominent members of the region who were not associated with the university. Presidents were to be elected for a five-year term but could not seek a second mandate.

Each UER council was given the full authority to design its own programs of study, research, teaching methods, and systems of evaluation. They had to correspond to a national standard which would be set by the Ministry of National Education. They were also given

greater autonomy over their own budgets and financial matters according to national limits and guidelines. The law also encouraged the active participation of students, teachers, and other staff in determining the direction of the university. Elections held among the teaching and research staff as well as for the university council were to be by secret ballot. Though this had been one of the chief demands on the part of students, their participation rates have been rather low.

The law also took great measures to reduce the formidable power which had rested in the hands of the professors. The new universities were to offer a multidisciplinary approach between arts and letters, science, and technology. It was hoped that this measure would also break down the traditional barriers between individual disciplines and introduce students to broader aspects of French society and culture.

The law of orientation has served as the basic structural model for the University of Orléans, which was created as a result of the legislation in 1971. Its three UERs offered courses in law, data processing, and technology. It chose to organize its courses in units of cycles rather than years, as was the case in many older universities. There were three phases of study: the first cycle of general study leading to an intermediate degree (*diplôme*), an additional year of specialization leading to the first degree (*licence*), and a fourth year leading to a master's degree which would then enable a student to pursue the doctorate.

Since the 1970s, the University of Orléans has been in a perpetual state of change and evolution. Although the 1968 law of orientation still remains the basic organizational structure, the university has been quick to respond to changes proposed by the Ministry of National Education. In 1973, changes were introduced to the intermediate degree. A new degree, the *diplôme d'études universitaires générales* (DEUG) was introduced for students who did not wish to pursue further studies after a two-year course. It was also intended to harmonize with the *diplôme universitaire de technologie* granted by the institutes of technology. A further aim was to streamline and reduce the number of students attending university as well as to deal with the high drop-out rate which still plagued the educational system.

Following the recession of the early 1980s, a new law, the Savoury law was passed in 1984. The *unités d'enseignement et de recherche* (UERs) were replaced with *unités de formation et de recherche* (UFRs). More than just a change in nomenclature, the law wanted to stress the importance of training (*formation*). Its chief proponent, Savoury wanted to encourage institutions of higher learning to address the critics in industry and commerce who argued that graduates were insufficiently trained to meet the challenges of a global economy and new technologies. The law provided for a greater role on the part of local industry and regional governments on the university councils.

The law also allowed universities to establish separate streams which involved more orientation and specialization during the first two years and led to the DEUG *renové*. Further impetus to professional training was accentuated with the awarding of professionalized master's degrees.

The Minister of National Education left the decision to institute these changes up to each individual university. The University of Orléans was one of those which swiftly adopted the changes and completely reorganized in May of 1985. It established three UFRs in law, economy, and management; letters, languages, and human sciences; and in applied and natural sciences. It also includes a school of engineering and two institutes of technology.

The university awards national diplomas that are centrally sanctioned by the Ministry of Education. The period of study is organized in three stages (cycles). The first generally lasts two years and offers an initiation to the study and methodology of various disciplines. It leads to the first national diploma, the DEUG. The diploma is multidisciplinary and will enable students to qualify for further study in a wide range of areas: law, economics, communication, arts and literature, and social sciences.

The second stage consists of the *licence* (equivalent to a bachelor's degree) and is awarded after one additional year of study. The master's (*maîtrise*) is awarded to those who complete two more years after getting their DEUG and is usually taken by those who intend to continue into the third phase or wish to have a qualified teaching certificate. The third phase can involve as much as ten years of additional study and includes the *diplôme d'études approfondies* (DEA), which is itself a preparation and qualification for the doctoral thesis.

The institutes of technology (IUTs) are in fact separate institutions within the university framework. Their objective is to train high-level technical staff for France's industrial and private sectors. Admission is selective and competitive as is not the case in the rest of the university. Candidates, chosen based on their academic records and an interview, are offered a two-year intensive program in specialized areas such as chemistry, mechanical engineering, business administration, and computers. The program also includes obligatory work placements. Since many of the graduates find jobs, there is a high demand for admission.

The *École supérieure de l'énergie et de matériaux* is a school of engineering and is also a separate institution

that offers more senior instruction for engineering students in the third stage. It awards the DEA, an engineering degree as well as a doctorate. The University of Orléans followed the recommendations to increase professionally oriented certificates upon completion of the first diploma.

The need for more practical training has also greatly influenced the course and subject matter at the UFRs. Though they still grant the traditional diplomas and degrees, many modern subjects have been added to the curriculum. Students in applied modern languages, for example, are encouraged to follow courses which provide them with career opportunities outside the field of education. In addition to two modern European languages, they must study economics, marketing, accounting, management, and business. Such courses have proven popular with students as they increase their job prospects not only in France but throughout the European community.

The university also offers French language and civilization courses for foreign students. Universities in France have always played an important role in providing courses for non-francophones. Its *Centre d'études pour étrangers* provides courses which lead to a certificate.

The French educational system has undergone fundamental changes since 1958. As France continues to draw closer to its European neighbors, new economic and technological changes have put a strain on the French institution of higher learning. At present, the enrollment of over 16,000 students at the University of Orléans and the practical need for longer periods of study and more professional needs may challenge the principles of free admission, greater autonomy and participation, and multidisciplinary.

Further Reading: While no history of the University of Orléans exists in English, several books mention the university in the context of the rather turbulent history of French higher education in the twentieth century: Jean Capelle's *Tomorrow's Education, The French Experience* translated by W.D. Halls (Oxford: Pergamon Press, 1967), W.D. Halls's *Education, Culture and Politics in Modern France* (London: Pergamon Press, 1976), and *Reforms and Restraints in Modern French Education* (London: Routledge and Kegan Paul, 1971).

—Manon Lamontagne

UNIVERSITY OF OXFORD

(Oxfordshire, England)

Location: The University of Oxford is located in the city of Oxford, Oxfordshire, England. The city is 56 miles northwest of London and has a population of approximately 150,000. Oxford is situated on the banks of the Thames and Cherwell rivers.

Description: The University of Oxford is England's oldest university and is world renowned as a bastion of scholarship, eccentricity, and civility. The school is a unique composition of 36 colleges and 6 permanent private halls. Men and women undergraduate and graduate students are admitted in accordance with the individual college's requirements. Total student enrollment is approximately 15,000. The university buildings and grounds are spread throughout the city itself, which is a thriving metropolitan area.

Information: University of Oxford
University Offices
Wellington Square
Oxford OX1 2SD
England
(865) 270000

Visiting: University of Oxford
External Relations Office
Wellington Square
Oxford OX1 2JD
England
(865) 2700101

Although the exact founding date for the city of Oxford is unknown, the city's development can be traced to several factors. The name, commonly believed to be derived from "oxen ford," hints that one reason for the city's development was as a convenient location for animals and their owners to cross the rivers in the area. Located in the developing economic and political center of England, Oxford's geographic importance was reflected in the ancient name for the city center: Carfax. This name, used even today, is thought to be derived from the Latin "quadrifurcus" or the French "quatre voies" and describes the four-cornered intersection of two main streets that have been here since Saxon times. The establishment of religious institutions and the area's political importance as a strategic location were other factors con-

tributing to the growth of the region. The Anglo-Saxon Chronicle of 912 contains the first written mention of Oxford, although by this time the settlement was probably over 200 years old. St. Frideswide's Priory, founded by the saint herself after divine intervention rescued her from an unwanted marriage, was established here in the eighth century. Today Christ Church Cathedral of Oxford University stands on the site of the ancient priory. Power struggles between the Danes and the Saxons enveloped the area during the tenth and eleventh centuries until political stability was achieved when the Normans conquered the area. Robert d'Oilly, the first Norman governor, oversaw the building of a castle, a wall surrounding the city, and the area's first three bridges, Folly, Magdalen, and Hythe, in the early twelfth century. In 1129 another priory, later called the Osney Abbey, was established in Oxford. Oxford University thus had as its birthplace a burgeoning center of transportation, religious, and political activity.

The exact founding date of the university, like that of the city, is not precisely known. Oxford is generally thought to have become a center for learning after 1167, when English students were no longer allowed to attend the University of Paris. Masters and students gathered in Oxford for the discussion of topics as varied as theology, the arts, and the works of Aristotle. As both the school and the city grew, tensions between the two groups arose, causing what became known as "town and gown" friction. In 1209 one dispute became so large that many scholars felt the situation unbearable and moved to the town of Cambridge. There they founded the University of Cambridge, a rival school still in existence today. The first recorded acknowledgment of Oxford University comes from a papal grant of 1214. This grant provided privileges, such as reduced rents, for the growing community of scholars and students who lived throughout the city. It was also at this time that Robert Grosseteste, a mathematician and churchman, became the first chancellor of the university. Grosseteste remained chancellor of the school until 1235 when he became bishop of Lincoln. Subsequently, for over 100 years, the bishop of Lincoln had influence over Oxford University thus adding to the school's religious character—noted even today in many of the college's names.

In these early days of the university, students lived in rented lodgings at hostels or halls, and classes were held in rented rooms or at churches. St. Edmund Hall (which did not receive official status as a college of Oxford University until 1957) was one such place of residence for students and has been in existence since the early thir-



University of Oxford

teenth century. The first colleges of Oxford University were created with endowments as housing for poor students unable to afford the rental expenses. The first three colleges of Oxford University were University College, Balliol College, and Merton College. Although all vie for distinction as the oldest, it appears that in 1249 University College was the first to be endowed. The quadrangle of this college contains a memorial to poet Percy Bysshe Shelley. He was, however, expelled from the school in 1811 for the publication of his pamphlet *The Necessity of Atheism*, which apparently expressed views offensive to the administration. Balliol College, generally thought to have been founded in 1263, was endowed by John de Balliol as an act of penitence. Many of the buildings seen here today are from the eighteenth and nineteenth centuries. Scorch marks on the quadrangle archway are from the burning of Archbishop Cranmer and Bishops Latimer and Ridley, who were killed for their Protestant beliefs. Members of Balliol College include Adam Smith, Aldous Huxley, and Graham Greene. Merton College, founded 1264 by Walther de Merton, the Bishop of Rochester, has many of the oldest surviving buildings of the university, some with work by Sir Christopher Wren. The gateway

tower was built in 1418; the college Hall dates from 1277; and the library, constructed 1371–78, is noted for being the first to store books upright on shelves. Merton's Mob Quadrangle is the oldest at Oxford (built 1304–78) and became the model for the university's other quadrangles (four-sided lawns surrounded by buildings). Famous Mertonians include Lord Randolph Churchill, Sir Max Beerbohm, and Japanese Crown Prince Naruhito.

Oxford University has continued to expand, and colleges have been added to the university every century since the 1200s. A chancellor is the honorary head of the university. The university, however, is actually run by the vice-chancellor, who is selected from the college heads on a rotating basis and serves for a four-year term. Two proctors, the Hebdomadal Council, and the Congregation make up the rest of the administration. Each college has its own statutes, although together the colleges are overseen by the university, which approves course content, sets examinations, and awards the degrees. In 1571 the university was officially incorporated by an act of Parliament. It is technically known as "The Masters and scholars of the University of Oxford" and properly called the University of Oxford, although the school is world

renown as Oxford University. Students apply to and are admitted by individual colleges, each of which offers a variety of subjects to study. Tuition is paid to the individual college, although an annual fee is also paid to the university. The colleges have residence halls, dining facilities, libraries, and heads (known variously as dean, rector, warden, master, principal, and provost). It is one of the unique features of Oxford that the colleges have distinct personalities. Students are instructed in "tutorials," an intense and unique educational experience. In the tutorial, students (either individually or with one or two others) meet with a professor to discuss work done in the past week. The work may be an essay or the answer to a problem posed by the professor, and the sessions last an hour. During this time the student is expected to define, defend, and debate ideas with the professor. The aim of this teaching method is to create logical and independent thinkers. Undergraduate degrees normally take three years to complete, although some such as those in Arabic, biochemistry, engineering, and Japanese take four years. Two examinations are given. The first is called Prelims (preliminary) or Mods (moderations) and is typically taken in the first year of study. The second exam, Finals, is taken in the last year. Numerous graduate degrees are awarded by the university. The academic year lasts from mid-October to mid-June and is divided into the terms of Michaelmas, Hilary, and Trinity.

The long history of the school and its individualistic colleges combine to form a place noted for traditions and eccentricities. One university regulation prohibited students (even in the twentieth century) from carrying bows and arrows. The regulation probably stems from a 1355 town and gown dispute that led to rioting and fatalities on both sides. In the 1990s dressing for dinner was still required, although depending on the college, students may need to dress one way for the first seating of dinner and another for the second. In the Mertonian Time Ceremony, students of Merton College parade in full academic dress backwards through the quadrangle when the clocks are changed back to Greenwich mean time in the fall. The campus security officers, nicknamed bulldogs, are noted for their black suits, derby hats, and regal air. The university has also played a role in the history of the nation, when during the civil war of the seventeenth century it was refuge to Charles I and Parliament. During the 1800s the constitution of the university was revised, the academic quality improved, and religious testing abolished. The university only admitted men until the late nineteenth century, when five schools were established for women. Women, however, were not formally allowed to receive degrees from the university until 1920. The five women's colleges were Lady Margaret Hall (1878), St. Anne's (1879), Somerville (1879), St. Hugh's (1886), and St. Hilda's (1893). Oxford remained gender segregated until the 1970s when most of the colleges became coeducational. Today St. Hilda's is the only college that admits women exclusively.

Of the colleges, the most famous of those founded in the fourteenth century include Exeter (1314, one famous member of this college was J.R.R. Tolkien), Oriel (1326, noted for its library designed by James Wyatt in 1788), Queen's (1340, famous member: Joseph Addison), and New (1379, known as an excellent example of perpendicular architecture). Famous colleges established in the fifteenth century include Lincoln (1427, originally intended for the instruction of clergy to refute the Lollard beliefs of John Wycliffe's followers), All Soul's (1438, today admitting only fellows), and Magdalen (1458, where the chapel choir is known for its choral services). Brasenose (1509, perhaps named after an old door knocker), Corpus Christi (1517, featuring one of Oxford's most picturesque libraries), Christ Church (1546, containing both the Cathedral, the smallest in England, and Tom Tower, with a seven-ton bell cast in 1680 and originally belonging to Osney Abbey), St. John's (1555, famous member: Sir Tryone Guthrie), Trinity (1555, famous member: Sir Richard Burton), and Jesus (1571, famous member: T.E. Lawrence) are among the most well-known colleges from the sixteenth century. Pembroke (1624, famous member: Samuel Johnson), Hertford (1740, famous member: Evelyn Waugh), and Keble (1868, featuring the longest Hall in Oxford) were later noted additions to the university. The twentieth century has seen the establishment of such important colleges as St. Anthony's (1950, emphasizing graduate studies in the humanities and international relations), Wolfson (1966, emphasizing graduate studies in the natural sciences), and Green (1979, emphasizing graduate studies in all sciences). Most colleges have a student body of only 300 or 400. There are also six permanent private halls associated with the university. These schools were originally established to provide religious education. They are, with their original founding dates and religious association: Manchester College (1786, Unitarian), Regent's Park College (1810, Baptist), Mansfield College (1886, Congregational), Campion Hall (1896, the Society of Jesus), St. Benet's Hall (1897, Benedictine), and Greyfriars (1910, Franciscan).

Other famous features of Oxford University include the Bodleian Library, Ashmolean Museum, the University of Oxford Botanic Garden, and the Oxford University Press. The Bodleian is the principle library of the university and is entitled to a copy of every book printed in England. The library is one of the oldest functioning libraries in the world and dates back to the fifteenth century. The Ashmolean Museum, opened in 1683 as the first public museum in England, is noted for its art and archaeological collections. The University of Oxford Botanic Garden, founded in the seventeenth century, today contains approximately 8,000 species of plants. The Oxford University Press, which came under control of the university in 1629, is a world-renown publisher of scholarly, religious, and reference works. One of its most famous publications is the *Oxford English Dictionary*.

Today Oxford University has a student population of approximately 15,000, made up of both men and women, public and private school graduates, and students from England as well as other countries. The school sponsors Rhodes Scholars, who are chosen from countries around the world for their intellectual ability, character, leadership qualities, and physical achievements. Oxford has contributed leaders to society in the fields of the arts, sciences, and politics. Prime ministers who attended Oxford include Clement Attlee, Harold Macmillan, and Margaret Thatcher. In existence for over 800 years, Oxford University is today internationally famous for its remarkable scholarship and traditions. An alphabetical listing of the colleges of Oxford follows: All Souls, Balliol, Brasenose, Christ Church, Corpus Christi, Exeter, Green, Hertford, Jesus, Keble, Lady Margaret Hall, Linacre, Lincoln, Magdalen, Merton, New, Nuffield, Oriel, Pembroke, Queen's, Rewley House, St. Anne's, St. Anthony's, St. Catherine's, St. Cross, St. Edmund Hall,

St. Hilda's, St. Hugh's, St. John's, St. Peter, Somerville, Trinity, University, Wadham, Wolfson, and Worcester.

Further Reading: There are numerous guides, maps, encyclopedia articles, and books about Oxford University, school life, and the buildings and colleges. The Oxford University website, <http://www.ox.ac.uk>, is an excellent starting point for information. Information about the Bodleian Library is available in Ian Philip's *The Bodleian Library in the 17th and 18th Centuries* (Oxford: Oxford University Press, 1983) and *Bodleian Library, Oxford* (a booklet on sale at the library, Oxford OX1 3BG, tel: [865] 277000). Works about the university include V.H.H. Green's *A History of Oxford University* (London: Batsford, 1974) and *The History of the University of Oxford*, 8 volumes (Oxford: Clarendon, and New York: Oxford University Press, 1984–94).

—Anne C. Paterson

UNIVERSITY OF PARIS

(Paris, France)

Location:	Scattered sites in and around Paris, France.
Description:	Thirteen autonomous, state-financed universities founded in 1970 under France's Orientation Act of 1968, which provided for reform of higher education. They replaced the former University of Paris, founded in the twelfth century.
Information:	<div>Université de Paris I (Panthéon-Sorbonne) 12, place du Panthéon 75231 Paris Cedex 05 France 46-34-97-00</div> <div>Université de Droit, d'Economie et de Sciences Sociales (Paris II) 12, place du Panthéon 75231 Paris Cedex 05 (Panthéon) France 43-29-21-40</div> <div>Université de la Sorbonne Nouvelle (Paris III) 17, rue de la Sorbonne 75230 Paris Cedex 05 France 40-46-22-11</div> <div>Université Paris-Sorbonne (Paris IV) 1, rue Victor Cousin 75230 Paris Cedex 05 France 40-46-22-11</div> <div>Université René Descartes (Paris V) 12, rue de l'Ecole de Médecine 75270 Paris Cedex 06 France 40-46-16-16</div> <div>Université Pierre et Marie Curie (Paris VI) 4, place Jussieu 75252 Paris Cedex 05 France 44-27-44-27</div> <div>Université Paris VII 2, place Jussieu 75251 Paris Cedex 05 France 44-27-44-27</div>

Université de Vincennes à Saint-Denis (Paris VIII) 2, rue de la Liberté 93526 Saint-Denis Cedex 02 France 49-40-67-89
Université de Paris-Dauphine (Paris IX) Place du Maréchal de Lattre-de-Tassigny 75775 Paris Cedex 16 France 45-05-14-10
Université de Paris X (Nanterre) 200, avenue de la République 92001 Nanterre Cedex France 40-97-72-00
Université de Paris-Sud (Paris XI) Centre scientifique 15, rue Georges Clémenceau 91405 Orsay Cedex France 69-41-67-50
Université de Paris Val-de-Marne (Paris XII) Avenue du Général de Gaulle 94010 Créteil Cedex France 48-98-91-44
Université Paris-Nord (Paris XIII) Avenue Jean-Baptiste Clément 93430 Villetaneuse France 49-40-30-00

The University of Paris is one of the oldest universities in western Europe. According to historian Hastings Rashdall, “The university was not made but grew; a date for its formation would be misleading.” The twelfth century, however, is generally acknowledged as the period of the university’s inception.

The system of education that sprang to life in France in the twelfth century had its beginnings during the Carolingian dynasty (eighth–tenth centuries). Each abbey and cathedral maintained a school for the training of young monks and clerks, and the school was headed by a *magister scholarum*, or master. By the end of the ninth century,



University of Paris

the School of Remigius of Auxerre, a monastery school perhaps connected with the church of Saint-Germain-des-Prés, existed; it has been called the first school at Paris.

The eleventh and early twelfth centuries saw the emergence of cathedral schools in Paris. The teachers were not monks but members of the secular clergy. These schools, attached to the Cathedral of Notre Dame, were presided over by the chancellor of the cathedral. A man desiring to become a teacher would, after a sufficient period of study and upon the approval of his master, receive from the chancellor, free of charge, a *licentia docendi*, or license to teach.

The first known master of the Cathedral School of Notre Dame was William of Champeaux (1070?–1121). William, who lectured in the cloisters of Notre Dame, was one of the early leaders of the intellectual movement that contributed to the birth of the University of Paris. It was from the study of dialectic, or logic, that the University of Paris grew. The cloister school of Notre Dame seems to have evolved into a *studium generale* by 1127, when a statute was issued that limited the lodging within the cloister to “members of the cathedral body.”

One of William’s pupils was Peter Abelard, whose teachings during the early years of the twelfth century attracted students to Paris from throughout Europe. Abelard, who was criticized for teaching without having first served an apprenticeship with a master, taught between 1100 and 1140. Although Abelard has been called the “father of universities” upon whose life and work the University of Paris originated, there is no trace of a university or society of masters during the first half of the twelfth century.

The theologian Peter Lombard (1100?–60) studied at Paris and taught theology at the school of Notre Dame from 1136–50. His *Four Books of Sentences*, a collection of church teachings and opinions, were the standard textbook on theology in the universities until the sixteenth century.

As the number of students at the cathedral schools increased, so did the number of masters, who soon became too numerous to be housed within the cloister of Notre Dame. They spread to other areas of Paris, including the bridges of the Seine. There also existed famous external schools at two other churches—the Collegiate Church of Sainte-Geneviève and the Church of the Canons Regular of St. Victor’s.

By the second half of the twelfth century, the number of schools had again multiplied. The population of masters and students in Paris became so numerous that they comprised ■ group apart.

Between 1150 and 1170 there arose, not ■ union of faculties, but a *Universitas magistrorum et studiorum*, a guild of teachers and students. Out of this guild, formed by the increasing number of students and masters at the cathedral schools of Notre Dame, originated the university. The cathedral schools can be considered the “cradle” of the University of Paris.

The custom of “inception” (or commencement) into the guild involved a formal ceremony admitting the newly licensed master into the society, in addition to recognition by both his old master and the other members of the group. Evidence that a guild existed in the twelfth century is found in ■ chronicle from the year 1214. In it, the English historian Matthew Paris wrote that the abbot of St. Alban’s, while ■ student at Paris (probably no later than 1170–75), was admitted to a “fellowship of the elect masters.”

In 1200, a tavern brawl resulted in the killing of five students by an armed band led by the Provost of Paris. The student population was so incensed that it threatened to withdraw from the city, and the masters appealed to King Philip II Augustus. The king, fearful that the masters might follow through with their threats, issued ■ charter that extended royal protection and goodwill to the students of Paris.

In 1208–9, the first written statutes of the University of Paris are mentioned in letters of Pope Innocent III, referring to an association of Paris masters and of the statutes they were sworn to obey. The oldest preserved statutes, however, date from 1215, the year they were presented by the papal legate Robert de Courçon.

The special treatment granted by the king to the Parisian students soon met with resistance from the bishop and the chancellor of Paris, who were accustomed to exercising control over the schools. A series of conflicts occurred between 1212 and 1231. At issue were the granting of licenses, jurisdiction over the schools, and the university’s right to endow itself with statutes.

The conflict came to a head between 1229 and 1231. A tavern brawl, again involving students, erupted during the carnival of 1228–29. The regent, Blanche of Castille, after being informed of the disturbance by the bishop of Paris, sent royal sergeants to the scene. Several students were killed. On April 16, 1229, the masters resorted to an extreme tactic: they determined that, unless justice were obtained through the bishop of Paris and the regents within one month’s time, they would dissolve the university and disperse. Their threat was ignored, and, as ■ result, scores of masters and students began to leave Paris. They traveled to Oxford and Cambridge, Rheims, Orléans, Angers, and Toulouse. (The University of Angers perhaps traces its beginnings to this migration.) The decline in the city’s prestige and prosperity began to cause alarm.

The university and its colleges at this time had no permanent buildings or locations. They borrowed a church or convent for their meetings, and even these varied. Dispersal, therefore, was not difficult; the only property was the fees paid by the students.

The tactic proved effective; the masters and students soon gained the support of the pope. After the civil and ecclesiastical leaders of Paris submitted to the terms of reparations and guarantees for the future, the masters and students returned to the city. On April 13, 1231, Pope

Gregory IX issued a bull, the *Parens scientiarum*, which became the Grand Charter of the University. Until the Great Schism of 1378, the University of Paris received special treatment from the popes, who continued to discourage the foundation of schools of theology by other universities.

By the middle of the thirteenth century, the masters of the university had divided into four faculties: theology, canon law, medicine, and arts. The seven arts (the *trivium* and the *quadrivium*), part of the curriculum of the arts faculty, were the first step in a student's training; the *artista*e, or arts students, were the equivalent of modern-day undergraduates. The process of advancing from arts student into one of the "superior" faculties of medicine, canon law, or theology took seven or eight years.

The time required to progress through the superior faculties varied. The study requirements as stated by the faculty of medicine (around 1270–74) consisted of 32 months for the bachelorship and 5 to 6 years for the license. The required length of study for the faculty of canon law in the mid-fourteenth century was 48 months over a 6-year period for the bachelorship and 40 months for the license. In 1215, the length of study required by the faculty of theology, which was considered the most important of the superior faculties, was five years of initial study and eight years for the doctorate, and the doctor had to be at least 35. By 1366, the length of study had increased to 16 years; by 1452, it had dropped to 15.

Presiding over each of the four faculties was a dean. The arts faculty was divided into four "nations": French, Picard, Norman, and English, and over each nation was a proctor. The term rector came to be reserved for the head of the faculty of arts, and by the mid-fourteenth century, the rector was recognized as the head of the entire university.

The mid- to late-thirteenth century brought an influx of scholars from throughout Europe: Albertus Magnus from Germany, Bonaventure and Thomas Aquinas from Italy, Roger Bacon from England, and Duns Scotus from Scotland. The masters of the University of Paris, part of the secular clergy, opposed the right of the mendicants, members of the Dominican and Franciscan orders, to teach at the university because the mendicants had not taken an oath to obey the statutes of the university. Albertus, Bonaventure, and Aquinas were sent by Pope Alexander IV to defend the mendicant orders; they were successful in their mission.

About 1257, Robert de Sorbon, theologian and chaplain of King Louis IX, founded the Maison de Sorbonne as a dormitory to house 16 students who had attained the degree of master of arts and wanted to continue on to the doctorate of theology. The number soon increased to 36. Sorbon became the chancellor of the university in 1258. In 1259, the Sorbonne was sanctioned by the pope; it soon developed into a major center of learning and the "core" of the University of Paris. Toward the end of the thirteenth century, the Sorbonne was the administrative seat of the

university, and the city contained approximately 15,000 undergraduates. The word Sorbonne, although in reality the name of the building and not a college or university, was long used as a synonym for the University of Paris.

At the beginning of the fourteenth century, the faculty numbered more than 500, and the students, who came from many countries, were too numerous to count. Its prestige lay in the teaching of philosophy and theology. By the mid-fourteenth century, the city of Paris had 40 colleges and students from every country in Europe. The university had attained a reputation of excellence unsurpassed "in all Christendom" and was known as "the great school where theology was studied in its most scientific spirit."

During the thirteenth and early fourteenth centuries, the university did not actively concern itself with French politics. This soon changed: toward the end of the fourteenth century, its political influence and privileges, and later its pretensions, began their climb.

After the death of King Charles V in 1380, the university, by then accustomed to the favor of the Crown and an unprecedented degree of prestige, became increasingly involved in political affairs. In 1382, the university was asked to intercede on behalf of a group of rebels convicted in an uprising against "the tyranny of Anjou." The faculty of theology became the unnamed theological police of the Church, and by the fifteenth century, the power of the university was such that its approval was considered necessary in the resolution of a political crisis. In the early fifteenth century, the university sided with Burgundy in a dispute against Armagnac.

During the Hundred Years' War between France and England (1337–1453), the university aligned itself with England and acknowledged Henry V as king of France. The majority of the masters had, however, left Paris during the occupation by the English. (Many of them had fled to Poitiers, where a new university arose.) In 1430, the masters who remained in Paris were said to have initiated the idea to try Joan of Arc and to have provided one of their best prosecutors. The Parisian doctors who assisted at the trial had, however, been generously compensated by the king of England.

The University of Paris was involved in efforts to end the Great Schism of the Roman Catholic Church (1378–1417). Jean Gerson (1363–1429), appointed chancellor of the university in 1395, was one of the principals in the attempt to put an end to the conflict. One suggestion offered by the university and voted on by the four faculties was that a general council be formed to solve the dispute. Both sides of the papal schismatics, however, refused to admit to the council's authority. (The theory of conciliarism contended that a general council of the church had authority over the pope.) Jean Rousse, a master of theology at the university, presented the council's appeal. The regent ordered Rousse imprisoned and, although he was soon released, Rousse's arrest caused consternation among the clergy and the university. Once

again students, masters, and doctors left Paris for other locations. This disbursement, however, marked the beginning of a decline in the university as a center of learning.

Superstition was prevalent during the fourteenth century. When asked by King Philip VI for a report on the plague, the doctors of the University of Paris said it was caused by "a triple conjunction of Saturn, Jupiter, and Mars in the 40th degree of Aquarius said to have occurred on March 28, 1345." This pronouncement was accepted as the official cause. At the end of the fourteenth century, the faculty of theology succeeded in calling attention to the black arts (witchcraft), by then almost forgotten, and it failed to dispute the existence of demons.

During the fourteenth and fifteenth centuries, the special privileges long enjoyed by the university began to erode, and the government interfered more frequently in the university's business. As the need for revenue increased, government officials began to look askance at the tax exemptions that had been granted to academic ecclesiastics. In 1446, an edict from King Charles VII "proclaimed the jurisdiction of the Parliament in the suits of the university."

The reign of Louis XI (1461–83) brought a further decline in the influence of the university. Under Louis's policies, the character of the university began to change from ecumenical to nationalistic. In 1467, the king ordered the university to cease any interference in political matters, "even in letters to their relations"; in 1470, he ordered all scholars who were subjects of the duke of Burgundy to take an oath of allegiance to the Crown; and in 1474, he declared the rector of the university subject to the king. The international nature of the university, which had heretofore been protected by rulers who offered protection to its foreign students, waned.

During the reign of Louis XII (1498–1515), the university suffered a major setback. When it opposed an edict "limiting its privileges and guarding against their abuse" (which included tax exemptions), the Crown banned the right of cessation. Thus the university could never again exercise the "great instrument of academic aggression" that it had utilized so frequently in the past.

The studies in theology and philosophy, which had been so important to the university's reputation in its early years, began to deteriorate under Scholasticism. Consequently, the university contributed little to the humanistic spirit of the Renaissance.

While a student at the University of Paris in 1495, the great humanist Erasmus expressed his disappointment in the theological teachings: "Those studies can make a man opinionated and contentious; can they make him wise? . . . By their stammering and by the stains of their impure style they disfigure theology, which had been enriched and adorned by the eloquence of the ancients. They involve everything while trying to solve everything." The Sorbonne was later (in 1527) to condemn Erasmus's *Colloquies*.

The Sorbonne was disrupted by the religious conflicts that occurred during the Reformation and Counter-Reformation. After Martin Luther's break with the Church in 1520, the school reacted swiftly. The following year, it condemned Luther's *Babylonish Captivity*, and in 1523, it brought about the arrest of Louis de Berquin, a friend of Erasmus, for translating Luther's works. Six years later, de Berquin was burned at the stake for heresy.

The Sorbonne increasingly met with criticism and opposition. King Francis I objected to its narrow theological teachings and, in 1529, in an effort to provide studies in the humanities, he established the Collège Royale (later renamed the Collège de France). Tuition was free, and four "royal professors" were appointed to teach Greek and Hebrew; Latin, medicine, mathematics, and philosophy were soon added.

Francis's sister, Marguerite of Navarre, was summoned in 1533 to appear before the Sorbonne on a charge of heresy. She refused, and the king defended her actions. Marguerite was a protector of the religious reformers and a devotee of the arts and letters.

The sixteenth-century writer and physician, François Rabelais, personified the humanistic spirit of the Renaissance. His *Gargantua* (1534), which he dedicated to Marguerite of Navarre, drew condemnation from the Sorbonne for its satirical depiction of the clergy.

Censorship of publications was prevalent during the Inquisition, and the Sorbonne contributed to the stifling of ideas by issuing, in 1544, the first general list of condemned books. The Etiennes, a renowned publishing family whose first press was established in Paris around 1500, were often criticized by the Sorbonne. In 1552, one member of the family took his press and transferred it to Geneva; in 1566, another brought on the wrath of the Sorbonne by publishing a work comparing Christian miracles with Greek marvels.

Since the system of education in western Europe was under the influence of the Church, the disruptions that occurred during the Reformation directly affected the schools. Universities lost their international character because religious differences among countries prevented students from traveling far afield for their education. The number of students at the University of Paris remained high (6,000), but few came from foreign lands, and new and enlightening ideas were discouraged. Montaigne and Rabelais criticized the curriculum as being far removed from real life. At a meeting in Orléans in 1560, the chancellor for the Queen Mother, Catherine de Médicis, called for mutual tolerance between Catholics and Huguenots. A doctor of the Sorbonne responded by urging that the death penalty be imposed upon all heretics.

By the end of the sixteenth century, the University of Paris was in serious need of reform. It was still governed by the 1452 statutes, which remained untouched by the spirit of the Renaissance. In 1595, Henry IV set up a commission of six members to prepare new statutes to

define the role of teachers, to reinforce discipline, and to start new programs. These statutes, which remained in effect through the end of the eighteenth century, were implemented in 1598. Under Cardinal Richelieu (1585–1642), new colleges, including the present site of the Sorbonne (completed in 1627), were constructed. He laid the first stone of the Sorbonne's chapel, where he is buried.

Religious conflicts continued throughout the seventeenth century. The University of Paris was troubled by theological strife stemming from the Jesuits and the Jansenists. In 1663, the Sorbonne affirmed the Gallican tradition, which granted French kings the right to appoint bishops and abbots. This position, upheld by Louis XIV but opposed by Pope Innocent XI, almost led to a split between the French Church and Rome.

After Louis XIV's death in 1715, Philippe d'Orléans, regent for the five-year-old Louis XV, ordered that the University of Paris be opened to all qualified students, with their tuition paid by the state. The Sorbonne, however, remained intransigent. It continued to condemn books, even some which had been printed with the royal imprimatur. In 1751, it objected to portions of the naturalist Buffon's *Histoire Naturelle* as contradictory to "the teachings of religion."

Following the expulsion of the Jesuits in 1762, the 500 colleges of France became part of the University of Paris. In 1767, the Sorbonne ordered the destruction of "every teaching threatening to shake the foundations of the Catholic faith."

With the French Revolution came the dissolution of all institutions of the *ancien régime*, including the Roman Catholic Church. On September 15, 1793, the National Convention abolished all universities in France and, for 13 years, schools specializing in different fields of learning supplanted them. In 1795, the Directory, a form of government consisting of five men with executive power, began a four-year rule that ended when Napoléon staged a coup on November 9, 1799. Under the Directory, teachers were instructed to "exclude from your teaching all that relates to the dogmas or rites of any religion or sect whatever," an attempt "to build a social order upon a system of morality independent of religious belief."

Between 1806 and 1808, Napoléon I established the Imperial or Napoléonic university (after 1815, known as the University of France). The university was divided into academies, each headed by a government-nominated rector. It was a centralized system of education that encompassed all teaching units in France, including the primary and secondary schools. In 1821, the Academy of Paris acquired the buildings of the Sorbonne; the reconstituted University of Paris became part of the Academy of Paris.

This system remained in effect until the final years of the nineteenth century. Teaching was secular, and professional chairs at the University of Paris numbered over 600; by 1885, there were nearly 12,000 students. Once again, the University of Paris was an important intellec-

tual and scientific center. In 1886, the faculty of theology, which had been so important in the university's history, disappeared.

Changes occurred during the late nineteenth century. The minister of education, Jules Ferry, introduced the idea of the separation of church and state; this became law on March 28, 1882. Individuals and associations were allowed to found private institutions of learning, but they had to follow the rules set down by the National Ministry of Education. Under Ferry, in 1896, a system of 23 *académies* or educational districts was established throughout France. Each district had its own university, and all districts were centralized under one minister of education. The system of 23 universities, each with the same five faculties (law, medicine, pharmacy, letters, and science), remained virtually unchanged until the 1960s.

In addition to the universities, a system of elite institutions, known as *grandes écoles*, was created to train professionals in engineering and administration. Students could not transfer from university to *grande école*, or vice versa. The system still remains in effect. The *grandes écoles*, however, unlike the universities, escaped the reorganization that occurred after the 1968 student revolt.

In 1900, students in French universities numbered 29,300 (12,270 of them in Paris). Enrollment grew from about 134,000 in 1950 to approximately 500,000 by 1967. Because of the open admissions policy, the number of students continued to increase, but so did the number of dropouts. By 1967, overcrowded buildings, understaffed faculties, and obsolete teaching methods had brought about a high level of student dissatisfaction and unrest.

Unrest led to protests. A political correspondent for *Le Monde* wrote that "France is bored," words that had been used by the poet-politician Alphonse de Lamartine on the eve of the 1848 Revolution. Students were "bored"—not only with the antiquated school system but also with the "status quo of bourgeois life and its government."

Student unions in France had long wished for more student involvement in the establishment of university rules and policies. In February 1968, the *Union nationale des étudiants de France* (UNEF), an influential union that traces its beginnings to 1877, urged students to begin a series of minor protests. In March, a group of about 150 students on the Nanterre campus of the University of Paris marched through the administration building and protested the lack of student control over the university's faculties. The left-wing group attracted nearly 2,000 students to their cause before the campus was closed by the rector.

The students moved their efforts to the Sorbonne, and the events that would reshape the entire university system of France were set in motion. On May 3, 1968, the police, who had been summoned by the rector of the Sorbonne in conjunction with the minister of education, entered the central courtyard of the Sorbonne and began arresting students, members of a left-wing group, who had gath-

ered there. The action of the police had perhaps been ordered because of the rumors that a right-wing group was planning to interrupt the meeting.

Word of the disruption spread throughout the city, and the Latin Quarter was soon filled with protesting students. During the next 24 hours, police clashed with students. Student leaders were imprisoned, and, in an unusual move, the Sorbonne was closed.

A week of student-police conflict followed. The Sorbonne, closed to all student activity, became an armed police fortress. The students tried repeatedly to free the Sorbonne from the authorities, but each march was unsuccessful. The student movement gained support among citizens and workers, and the revolt expanded to the provinces.

The European edition of *The New York Herald Tribune* reported, on May 7, "Paris Students Battle Police 14 Hours in Latin Quarter." The article called the Latin Quarter a "battleground" and parts of Paris "a city under siege." Clashes and student strikes continued to spread. Students used sticks and stones "and anything movable" to attack the police; the police employed nightsticks and tear gas. Injuries and property damage, including burned cars, overturned buses, and broken store windows, were reported.

Leaders of the student unions went to the powerful communist and socialist labor unions and asked for their support in staging a march. On May 13, nearly half a million people marched down the Champs Élysées in Paris. The government was forced to reopen the Sorbonne.

Strikes multiplied throughout France; by May 24, a general strike had the country in a state of near-paralysis. Negotiations between the de Gaulle government and the labor unions were unsuccessful. Then President de Gaulle made a move that helped to defuse the situation: he announced new elections within a month. Although students continued to protest throughout the summer, the movement lost momentum.

The students did, however, gain a victory. The government officials whom the students opposed were removed or shifted to less influential positions. The Gaullist minister of education was replaced by Edgar Faure, who vowed to reform the system of education. Faure's reforms resulted in the "Faure law," the *Loi d'orientation de l'enseignement supérieur* (Orientation of Higher Education Act), which led to a radical restructuring of the university system.

In 1970, the reforms set forth by the *Loi d'orientation de l'enseignement supérieur* of 1968 brought about the decentralization of the university system. The universities were reorganized into self-governing bodies, and students and teachers were granted a voice in the decision-making process. In addition, political activity was no longer forbidden on campus. The need for more graduates in the sciences and fewer in the liberal arts was addressed in the law that stated that the universities

would "associate wherever possible arts and letters with sciences and technics."

The faculties were replaced by more than 700 *unités d'enseignement et de recherche* or UER (units of teaching and research). The UER ranges from a single discipline (such as engineering or English) to interdisciplinary studies (for example, environmental sciences). Groupings of UERs became the foundation for the reorganized universities: 43 in the provinces (61 by 1975) and 13 in Paris.

The University of Paris, divided into 13 independent units, replaced the four faculties of letters, law, sciences, and medicine. Each university, with its own administration, faculty, and student body, has a primary focus. Paris I is a school of law, sociology, and economics. Paris III (the historic Sorbonne) emphasizes language and literature, and Paris IV, classical literature. Paris VI and VII, on the site of the old Paris wine market, comprise the new science complex. Paris XI, located in the former NATO headquarters, offers related studies in applied mathematics, economics, computer science, and management.

University policy is established by an elected council, consisting of teachers, students, and representatives from outside the university. The council elects the president, who replaced the rector of the old university system. The once powerful position of dean no longer exists.

An uprising of students, teachers, and administrators in April 1976 called for new leadership in France and protested Valéry Giscard d'Estaing's plans for university reform. The reforms to which students and faculty objected placed the blame for the country's high level of unemployment on an excessive number of liberal arts students; emphasis was to be shifted to technological and business studies. Both students and teachers rebelled against being told what they had to study or to teach, and most university rectors objected to the removal of the small amount of autonomy that remained with the institutions.

After the implementation of the 1976 reforms, only three percent of eligible students entered the new job-related programs (such as applied business Spanish and technical English translation). By 1981, the number increased to 15 percent. Additional reforms were introduced in 1981 favoring graduate degrees in the sciences at the expense of those in the humanities and social sciences. A five-year plan called for technological research and development as France's main priority.

In 1984, the public higher education service was formed to oversee university training after the awarding of the baccalaureate. In May 1991, Université 2000 was created to prepare for increased university enrollments and rising costs, to improve standards, to develop vocational training, to assist in regional development, and to prepare for increased world-wide competition.

In the fall of 1995, students of the Universities of Paris and throughout France demonstrated against overcrowded conditions. They demanded higher pay for the

faculties and an increase in the number of professors. In spite of overcrowding, underfunding, and a loss of prestige to the *grandes écoles*, the 13 Universities of Paris continue to attract students from throughout the world.

The 13 universities, their student enrollment figures and principal courses of study are the following:

The University of Paris I (Panthéon-Sorbonne) enrolls approximately 40,000 students in economics, human sciences, and political and juridical sciences. The University of Paris II (Université de Droit, d'Economie et de Sciences) enrolls approximately 18,000 students in law, economics, and social sciences. The University of Paris III (Université de la Sorbonne Nouvelle) enrolls approximately 19,000 students in contemporary languages, literatures, and civilizations. The University of Paris IV (Université Paris-Sorbonne) enrolls approximately 24,000 students in civilizations, languages, literature, and arts. The University of Paris V (Université René Descartes) enrolls approximately 30,000 students in health sciences (medicine, dentistry, pharmacy, biology, etc.), human sciences, and law. The University of Paris VI (Université Pierre et Marie Curie) enrolls approximately 37,000 in exact and applied sciences and biological and medical sciences. The University of Paris VII enrolls approximately 30,000 students in exact, biological, medical, and human sciences. The University of Paris VIII (Université de Vincennes à Saint-Denis) enrolls approximately 27,000 students in human sci-

ences, and science and technology. The University of Paris IX (Université de Paris-Dauphine) enrolls approximately 7,000 students in management sciences. The University of Paris X (Nanterre) enrolls approximately 35,000 students in juridical, economic, and human sciences, languages and civilizations, and technology. The University of Paris XI (Université de Paris-Sud) enrolls approximately 28,000 students in exact, biomedical, pharmaceutical, and juridical sciences and technology. The University of Paris XII (Université de Paris Val-de-Marne) enrolls approximately 22,000 students in juridical, biomedical, and human sciences. Finally, the University of Paris XIII (Université Paris-Nord) enrolls approximately 16,000 students in exact, juridical, medical, and human sciences, and technology.

Further Reading: No general history of the University of Paris exists in English, but general information about selected periods of the university's history can be found in A. Belden Fields, *Student Politics in France* (New York: Basic Books, 1970), *A Distant Mirror* (New York: Knopf, 1978), and several of the historical series by Will and Ariel Durant (Simon and Schuster), including *The Age of Faith*, *The Age of Napoleon*, and *The Reformation*.

—Sandy Gladfelter and Susan R. Stone

UNIVERSITY OF PENNSYLVANIA

(Philadelphia, Pennsylvania, U.S.A.)

Description:	A private university enrolling more than 22,000 students, with 4 undergraduate and 11 graduate schools.
Location:	The west side of Philadelphia, Pennsylvania, near the neighborhood of Schuylkill.
Information:	University of Pennsylvania 34th and Spruce Streets Philadelphia, PA 19104-6380 U.S.A. (215) 898-5000 (215) 898-7111

Philadelphia was one of the largest and most prosperous of American colonial cities in the 1740s, with a population of approximately 12,000, and a thriving commercial trade centered around its ports on the Delaware River. Only a small minority of the city's youth were formally educated, however, and the quality and manner of instruction even for privileged children was quite varied. The William Penn Charter School enrolled 20 to 30 boys in a classical program, and as many again who studied a cruder English curriculum. The majority of boys and girls lucky enough to receive some schooling hired individual tutors working in their own homes. To the chagrin of Philadelphia's religious and social leaders, nearly all of Philadelphia's poor children received no academic training whatsoever.

The first attempt to found a school available to a wider population of Philadelphia's youth was headed by George Whitefield, an Anglican preacher who came to the city in 1739. Whitefield was a controversial figure among Philadelphia's clergymen, for his manner of sermon approached the ecstatic, but he was extremely popular with the masses; there are reports that as many as 18,000 people attended some of his talks. Whitefield had helped to develop several charity schools in Britain, and he began planning for one in his adopted city soon after his arrival. He organized a board of trustees, most of them religious men of no special standing, to oversee the construction of a single building where Whitefield and others could preach, and in which to operate a charity school. The trustees soon obtained a lease on a plot of land at the corner of Fourth and Arch streets, and by June 1740, they had begun constructing the largest building in the city, known simply as the "New Building" following its completion.

Despite the intentions and promises of Whitefield and the trustees, no school operated out of the New Building for nine years. Then in 1749, a second group of trustees purchased control of the New Building with the intention of realizing a school. The new trustees were, unlike the first board, 24 of Philadelphia's wealthiest and most influential citizens, and thus they possessed the means to actualize their ambition. They acted quickly; at a meeting held November 13, 1749, they signed the *Constitutions for a Public Academy in the City of Philadelphia*, a document drafted by their president and Philadelphia's leading citizen, Benjamin Franklin. Thus, Franklin is often titled "the founder" of the University of Pennsylvania, which evolved from the academy chartered that day.

Franklin's plan for the academy was unique in all of western education, for it rested responsibility for the school on a "voluntary society of founders" whose purpose was secular and civic. Other schools in Europe and the New World alike were under the patronage of a church, a government, or individual. The academy, on the other hand, was to be maintained indefinitely by a board of trustees answering to no higher authority, and dependent on no single source of funding. Franklin's innovative academy opened in January 1751 with an enrollment of 145 boys, and the Free School followed that September.

The trustees soon added a college, the antecessor of the modern University of Pennsylvania. In the spring of 1754, Dr. William Smith, a well-educated Scotsman just 26 years old, began teaching collegiate level courses in logic, rhetoric, ethics, and natural philosophy (science). The following summer, the provincial governor signed a new charter incorporating "The Trustees of the College, Academy and Charitable School of Philadelphia in the Province of Pennsylvania." A new school administration was soon organized, and Smith was named the college's first provost. Teachers were accorded the title of "professor," and the college ambitiously assumed the authority to grant any degree of higher education awarded in Great Britain.

The college evolved quickly after its foundation, although it remained rather small. A dormitory opened in 1765, and homes for two professors and the provost were purchased near the College Building, as the New Building came to be known. The directors of the college organized an innovative and rather modern curriculum, the first in the nation that was neither modeled on medieval tradition of the *studium generale* nor centered around religious instruction. Students enrolled in a regularized three-year program, and were ranked as fresh-



University of Pennsylvania

men, juniors, and seniors. They studied mathematics, physics, history, politics, economics, law, classics, and oration. A few medical classes were taught as early as 1765, and a faculty of four doctors, all awarded their medical degrees at Edinburgh, was assembled four years later. The college assumed the right to grant doctoral degrees in medicine in 1772, and thus emerged the nation's first medical school.

The old colonial college organized around Franklin's liberal plan was radically altered by the War of American Independence. Following the revolution, the Pennsylvania state government fell under the control of the zealously patriotic Constitutional Party, which scorned the Anglican and aristocratic connections of the college, and the hint of loyalist spirit in Provost Smith and several faculty members. In 1779, less than a year after the British departure from Philadelphia, the state assumed control of the institution, and renamed it the University of the State of Pennsylvania. A new board of 24 trustees was then appointed according state legislation: six state offices

were permanently adjoined seats on the board of trustees, as were the leaderships of each of six church denominations. The 12 remaining trusteeships were designated to specific individuals, including Franklin, and these 12 were to be filled by citizens of the board's choosing as they were vacated in the future, although the state retained the power to override the board's decisions.

Smith vigorously resisted his ouster. He refused to leave his house, which belonged to the university, until he was legally evicted almost a year after being stripped of office, and he made a series of legal appeals to regain his post. In 1789, a state legislative committee assigned to examine the case determined that the state indeed had no right to hold the College Building itself, for it was legally the property of the original trustees. Smith and those of the original trustees still alive were restored their school, and for a short while it existed again as before the revolution. The university continued to exist as a legally distinct corporation, but it was forced to move into a building belonging to the Philosophical Society.

The bureaucratic difficulties involved in having these two corporations, which shared some professors, students, and influence over the academy, proved unmanageable, and they united, or reunited, in September 1791. The two boards of trustees agreed to title the new institution the "University of Pennsylvania," and then each elected 12 members to remain on the unified board. When the new trustees met during the early months of 1792, they were faced with the difficult task of forming a single faculty, and thus with dismissing many professors. Ironically, Smith was terminated by a vote of 13 to 11, for he was less popular than the rival candidate for the professorship in Greek and Latin, Dr. Davidson.

The college fared badly in several respects for approximately three decades following the university's reunion. First, it was sorely underfunded because it attracted too few students; in 1804, there were only eight seniors and six juniors. Students preferred institutions with dormitories, of which the university had none since the Revolution, and many of their parents favored schools with religious affiliations. Second, the caliber of instruction was deleteriously lowered to match the capabilities of boys rushed through the academy and enrolled at the college when they were just 13 or 14 years old. Finally, the trustees exercised a domineering control over the college—even choosing textbooks and curricula—that left the professors disgruntled, and the atmosphere on campus tense.

While the college stumbled and degenerated, the medical school prospered. The faculties of the old college and university both were retained in the new medical school, and several of the doctors established excellent reputations that attracted prestige and students to the program. Nearly 2,000 medical doctors were graduated from the school in the first quarter of the century, and approximately 3,000 more attended a year of study and went on to practice without state licensees, especially in the south. It is interesting to note that the professors were, at that time, paid directly by their students; the members of the medical faculty were wealthy with salaries estimated to have been between \$5,000 and \$10,000, earned during the four-month school year.

The university moved into a splendorous new home beginning in 1802, even while the college declined. Eleven years earlier, the capital of the United States was moved from New York to Philadelphia, and the state government constructed a grand building to house future presidents. The work was a majestic example of new classicism; it was three stories of brick, stone, and marble, capped by a glass dome and cupola, and its facade was adorned with eight Corinthian pillars and two Palladian windows. The President's House was completed in 1797, at a cost of more than \$110,000, and offered for rental to President John Adams, who declined the somewhat ungracious proposal. The U.S. capital was subsequently moved to Washington, and the state legislature put the building and several adjacent properties up for auction.

The university acquired the lots and building for the bargain price of \$41,650, and remodeled the President's House for scholastic use. Then in 1829, twin Georgian brick buildings were completed on the new campus, into which the collegiate department and faculty of medicine relocated.

The university prospered in its new environs. A new provost and college faculty were selected in 1828, and enrollment rose to 125 within two years, thus bringing in sorely needed capital. In 1852, a School of Mines, Arts, and Manufactures was added, through which a broader range of scientific courses were taught. Two years later, the university organized a law school, having belatedly acted upon a petition to do so sent by the Philadelphia Law Association in 1832. By the end of the 1860s, the student body numbered more than 700.

The university was variously, although not extensively, affected by the Civil War. The majority of students enrolled in the medical school were southerners, and many left the university for the duration of the war, some to join the Confederate forces. Students enrolled in the college formed a Student Officers Training Corps, but most were between 14 and 19 years old, and so were mere cadets. The university was under serious threat when the Confederate Army seized most of Pennsylvania, and the Battle of Gettysburg was literally underway when the commencement ceremonies of 1863 were held, but Philadelphia and the university plant survived the war unharmed. Approximately 780 men associated with the university are known to have served in the war, 130 of them for the Confederacy, and the remainder for the Union.

The university moved to its third and present location after the war. The old quarters in and around the President's House had grown worn and crowded, and the medical facilities were not up to contemporary standards. Moreover, the neighborhood surrounding the university was depressed and worsening. Ten acres of swampy farmland west of Schuylkill were purchased in 1870, and four new buildings were constructed within as many years. They housed not only the university, but also a hospital associated with the medical school. All were built of green serpentine stone collected in Pennsylvania's own Chester County, according to the plans of Thomas W. Richards, who later was appointed the university's first professor of architecture.

The university expanded modestly following the move. The awkwardly titled School of Agriculture, Mines, Manufactures, and the Mechanic Arts was reorganized, and given the graceful name of Towne Scientific School in honor of John Henry Towne, one of the trustees. A professorship in music was created in 1875, and a course leading to the degree of bachelor of music was organized the next year. The medical faculty considered establishing a dental program as early as 1874, and in 1877 proposed to absorb the Pennsylvania College of Dental Surgery. That school's administration refused, but

its faculty agreed to join the university if a dental department was established. One was in 1878, and the university began offering the degree of D.D.S. that same year. Just two years later, the dental school was moved into a new building, shared with the medical school.

Women won the right to enter the university piecemeal, beginning in the 1870s. The first two women admitted to the university were enrolled in the Towne Scientific School in 1876. They appealed directly to Frederick Genth, professor of chemistry, to allow them into his classes. He and the board of trustees agreed to do so. Ms. Carrie Kilgore was denied admission to the law school in 1871, and unsuccessfully appealed her case to the state supreme court. Then in 1881, she persuaded the state legislature to grant women the right to serve as lawyers. The law school admitted her that same year, and has ever since been open to women. The Graduate School for Women was organized in 1890, and the College of Liberal Arts for Women in 1933. The university was not fully coeducational until the 1970s.

William Pepper, elected in 1881, was the first provost of the university to be granted the authority ordinarily afforded a university president. By an amendment to the school charter, the trustees gave the provost executive authority over the board, and the presidency of each school faculty. Pepper, who remained in office for 13 years, famously used his power to guide the university through an unmatched era of expansion. Thirteen departments opened during his administration, including the prestigious Wharton School of Business Administration, the graduate school, and the Veterinary School. At the same time, the faculty rose from 55 to 300 professors and instructors, and the student body doubled, to nearly 2,000.

Like most American universities, Pennsylvania experienced a rush of applications in the first two decades of the twentieth century. Despite stepping up admissions requirements in order to curtail the influx, the university's student body jumped from approximately 2,000 in 1894 to more than 11,000 by the close of World War I. Provost Charles Harrison, Pepper's successor, oversaw an

astounding building program organized to accommodate the swollen institution. Thirteen stately brick buildings were raised during Harrison's tenure, several of them massive, including the law and dental schools. The esteemed architectural firm of Cope and Stewardson designed the huge Residence Hall, which is actually an interlocking system of 31 houses encompassing five interior courtyards. The hall is a blend of Gothic and classical styles, and is constructed of Flemish bond brick complemented by white limestone.

The history of the university in the twentieth century has been one of almost continuous growth and achievement, but historians have yet to analyze modern events. A few diverse highlights of the neglected period must serve to indicate the broad course of the university's development into one of the nation's leading academic institutions. The School of Nursing was established in 1935, and stands among the nation's best three today. The world's first computer, the ENIAC (Electronic Numerical Integrator and Computer), was built at the University's Moore School of Electrical Engineering during World War II, and three scientists associated with the university won Nobel Prizes in 1972. The Wharton School is widely considered the best business school in the United States, and ten programs in the College of Arts and Sciences are ranked among the country's most elite.

Further Reading: *History of the University of Pennsylvania, 1740–1940*, by Edward Potts Cheyney (Philadelphia: University of Pennsylvania Press, 1940; reprint, New York: Arno Press, 1977) is an excellent book, and widely available. Of course, it contains little information about the university since the Great Depression. An interesting history focused on 17 individuals associated with the university can be found in *Gladly Learn and Gladly Teach; Franklin and His Heirs at the University of Pennsylvania, 1740–1976*, by Martin Meyerson and Dilys Pegler Winegrad (Philadelphia: University of Pennsylvania Press, 1978).

—Bob Adams

UNIVERSITY OF PISA

(Pisa, Italy)

Location:	In the old section of Pisa, along the Arno River.
Description:	A state university of 34,000 students with faculties of law, economics, letters, political science, foreign languages and literature, medicine, mathematics and sciences, pharmacy, engineering, agriculture, and veterinary studies.
Information:	Università degli Studi di Pisa Lungarno Pacinotti 45 56100 Pisa Italy (50) 590 000

Pisa, with Genoa and Venice, once had been one of the most important cities on the Italian peninsula, victorious against the Saracens, and in the second crusade, active in banking and trade throughout the Middle East. It had developed its own legal code, and rudimentary republican but aristocratic form of government, known as Ghibelline, on account of its imperialist sympathies before 1100. The war waged sporadically with Genoa throughout the twelfth century was decisively lost by Pisa in 1284. By this date Pisa's cathedral (begun in 1068 and consecrated in 1118), the baptistry (begun in 1153 and completed in 1278), and the Leaning Tower (begun in 1173) were all testifying to a grandeur that had passed.

Something approaching a university can be assumed by ■ reference to a "nuntius," or representative of the Pisan scholars, in 1194. In the thirteenth century another stray reference shows that Pisa was attracting scholars from as far away as Marseilles. The lawyer Bartolo di Sassoferato, at Pisa from 1339 to 1343, writes of lecturing in Pisa's *studium generale* in 1340. The privileges of the *studium generale* were conferred on Pisa in ■ 1343 bull of Clement VI, which conferred on Pisa all the privileges of "Bologna, Paris, and other famous *studia generalia*." (The university lists this as its official opening.) Another bull allowed beneficed clergymen to study at Pisa, and the foundation was confirmed by Urban V in 1364. Siena and Arezzo were erected into *studia generalia* at the same time. The conferment of the status of *studia generalia* on the Italian peninsula (never granted to Genoa or Mantua) did not imply the ascendancy achieved in northern Europe by Paris or Oxford over neighboring chapter or cathedral schools.

By 1438 Pisa was awarding degrees in virtue of both papal and imperial authority, although references to the

1343 opening ceremony make it unlikely that any imperial charter could have preceded the papal bull. It is clear that in the Italian universities generally, episcopal supervision, while never absent, gradually yielded to civic financial support and to municipal academic direction. The Florentines regarded the erection of their *studium generale* as an external recognition of civic sovereignty.

An understanding of the importance of the University of Pisa depends on some knowledge of the relationship between Pisa and Florence during the Renaissance. Although Renaissance Florence had its own developed forms of higher education, and although the neoplatonist discussions of the group known as the Florentine Academy, established by Cosimo de' Medici and entrusted to Marsilio Ficino, was at the center of the most exciting developments in European culture in the late fifteenth century, attempts in Florence to found ■ university met during the fourteenth and fifteenth centuries with only mediocre success.

Universities were institutions for the training chiefly of administrators, doctors, and, in Italy, of a markedly smaller group of theologians. In Florence itself altogether more radical attitudes to social and political life than those envisaged by the universities were being explored, and the Medici in Florence were rich enough to import officials from elsewhere. Florence was not, in the fourteenth and fifteenth centuries, a place in which a medieval university might be expected to function well, and certainly not to rival the established universities of Bologna and Padua. A resolution dissolved the University of Florence in favor of amalgamation with the University of Pisa; it explicitly mentioned the expense of accommodation in Florence, the distracting delights of the life of the city, the departure of Pisa's wealthier citizens, and Pisa's declining prosperity.

In the end, under Lorenzo de' Medici, a merger of Florence's classes of higher education with the University of Pisa took place on November 1, 1472. Pisa gained Florence's university. The city was in need of resuscitation; it had lost its eleventh-century commercial importance and military power. As a university it offered cheaper accommodation, first-class facilities, and magnificent architecture. Pisa also offered the advantage of deflecting from Florence what might have proved any unwelcome attention to the contents of the curriculum or the orthodoxy of the teaching. Hence, the history of the University of Pisa can scarcely be unraveled from that of Renaissance Florence.

Florence had been defeated by Pisa in 1315 at Montecatini. Seriously weakened by further military defeat in



University of Pisa

1325, by plague in 1348, by war with Milan, by war in 1375 against the papacy, by the revolt in 1378 of the day-workers in the wool trade, and by the threat of Visconti conquest in 1402, Florence became oligarchic, effectively controlled by a score of important families. They reversed its decline, and expanded its dominion in Tuscany, attaching much importance to the conquest of Pisa in 1406. Florence allied with Venice in 1425, and made peace with Milan in 1428. It was the failure of Florence's expansionist ambition to bring Lucca into its control which set in train the events which led to the assumption of power in Florence by Cosimo de' Medici in 1434.

Lorenzo de' Medici revived the Pisan *studio* only by moving much of the teaching away from Florence's own *studio* and by imposing a ban on Florentine citizens which prohibited them from studying other than at Pisa. The bull dissolving Florence's own university dates from 1471, as Pisa became host to the university of its conquerors from November of the following year. The University of Pisa was to become second only to Padua in reputation among the centers of learning on the peninsula.

The University of Pisa was placed under a Florentine board of governors and had a Florentine *provisor*. Lorenzo kept at Florence only a few teachers. A decree stipulated that there should be "three or four" teachers of grammar, and mentioned the need to provide for the teaching of the Latin poets and orators, but the bulk of

ordinary curriculum was henceforward to be taught at Pisa. The Florentine Grand Council had in 1471 nominated five representatives "to organize a worthy *studio* in the city of Florence, and not elsewhere," but the decree restored the *studio* at Pisa.

The immediate cause scarcely can have been the sudden realization that accommodation in Pisa was less expensive. It has been more reasonably supposed that Lorenzo, realizing the place that Florence occupied at the forefront of the peninsula's cultural life, was not prepared to see its future administrators go off to Bologna and Padua for their training. The use that Florence proposed to make of Pisa was similar to that which Venice had already successfully made of Padua. The arrangement had the advantage of going some way to appease the hostility still felt at Pisa by its treatment at Florentine hands since its recapture in 1406, and was made easier by the fact that the bishop of Pisa was a Medici on friendly terms with the pope. After 1509 the Florentine grand dukes were again to restore the University of Pisa, and it was to be there that Galileo, a native of the city, was to establish his European reputation between 1592 and 1610.

The statutes of both Pisa and Florence show that during the fourteenth and fifteenth centuries Pisa came increasingly under the control of its Florentine city-state board, as professorial salaries became less of a charge on

the student purse and more on civic finances. That development also released the professors from their humiliating subjection to the student rector as had been first established at Bologna. Now both teachers and students became subject to civic authority. At Pisa, where the bedels were charged with noting the attendance and punctuality of professors, they reported not to the rector, but to the governing board of civic officials, which also retained the right of appointment. Benedict XII, pope from 1334 to 1342, refused to allow diversion of ecclesiastical revenues from the diocese of Pisa to support the *studium*, but much later Pope Sixtus V (1585–90) did allow a tax of 5,000 ducats to be raised from the clergy to support the *studium*.

For a brief period after 1338, the Pisa school was kept full by the migration from Bologna. Very swiftly, its student body split into at least two “universities,” or regionally grouped student bodies, apparently with different leaders or *rectores* by 1340. It may be that the *rectores* ruled not different national groups, but students of different disciplines, jurists on the one hand, with medical students and artists on the other. The *rectores* enjoyed wide jurisdiction, extending to all civil cases and to all criminal proceedings except those for theft or homicide.

The plague of 1348 severely damaged the Pisan institution, which took a century to recover. At times, teaching seems to have been altogether suspended, and in any case no trace was left before Pisa recovered from the 1406 conquest by Florence. In the fifteenth century the University of Pisa was four times forced temporarily to move, in 1478 to Pistoia on account of the plague, in 1482 and 1486 to Prato for the same reason, and in 1495 again to Prato on account of the revolt in Florence. Teaching had originally taken place in hired rooms, increasingly paid for by the governing board, but Lorenzo de' Medici turned the corn exchange into a grand university building in 1492. The same building also housed a college founded by Lorenzo for poor students. When Lorenzo moved the teaching of the standard curriculum, he spared no pains to see that the revived university at Pisa was a success. Lorenzo himself moved for several months from 1473 to 1474 to Pisa, and the salaries were adequate to attract the finest professors.

By the end of the fifteenth century the student *universitates* had amalgamated at Pisa, and there was only one *rector*. The Italian pattern was moving in the direction of that of the northern universities as separate colleges of doctors and *universitates* of students adopted a structure nearer to that of a single university divided into faculties.

About student life at Pisa we know relatively little. The licentiate, awarded after private examination, led normally to the doctorate, which meant incurring additional expense and was sometimes therefore taken at a university where the charges were less. Paduan charges

were lower than those at Bologna, until the sixteenth century when its degrees carried greater prestige. In the Italian universities investiture with the doctorate corresponded to the inception ceremony in northern institutions, and originated in a first ceremonial exercise of the powers attached to the new dignity in a way analogous to the reception ceremonies of the guilds of merchants and craftsmen. Presents, in time commuted to payments, had to be given by the candidate to the participating officials. At Pisa, in addition to fees, candidates were required to send each participating doctor a box of comfits of stipulated weight, as well as to pay for a banquet.

Lorenzo's second son, Giovanni, as Pope Leo X from 1513, was an active patron of the University of Pisa, but the institution declined again after his death, and by 1551 the city's whole population is estimated to have been under 10,000. Nonetheless, in 1581 Galileo entered the University of Pisa to study medicine and mathematics. He left in 1585 to study mathematics at Florence, holding a chair in that subject at Pisa from 1589 to 1592, when he left for Padua. It is unlikely that he ever dropped objects from the Leaning Tower. (While at Pisa, Galileo still believed that only bodies made of the same material accelerated at the same rate under the force of gravity, irrespective of differences in weight; he reportedly conducted experiments from the tower.)

The next major expansion of the University of Pisa took place in the nineteenth century, when the university embraced Italy's rising interest in science. In 1839 Italy hosted its first congress of scientists. Pisa, in response, assembled faculties in jurisprudence, philosophy, philology, medicine and surgery, natural sciences, and veterinary sciences.

In the nineteenth and early twentieth centuries, a number of political events affected the university. In 1848 several faculty and a large portion of the student body participated in the Austro-Hungarian War, which precipitated the university moving the faculties of theology and jurisprudence to Siena. In 1923, the fascists restructured the University of Pisa as a “Gentile” university, and it was not until the end of World War II that Pisa was able to return to its more open and avant-garde educational style.

In 1967, the university was divided into three distinct branches: the *Studi*, for professional study, the *Scuola Normale Superiore* for letters and sciences, and the *Istituti Pisani del Consiglio Nazionale delle Ricerche* (CNR). (Pisan Institutes of the National Council for Research). The CNR focuses on five sciences: biology and medicine, chemistry, physics, information and computer sciences, and environmental and earth sciences. There are 14 separate institutes within CNR, employing over 600 people. In order to modernize, the CNR began a large-scale program to build facilities to accommodate all the institutes. One of the largest research centers in Italy, the CNR invested millions of lire in the new center.

The university currently employs 300 professors (excluding the CNR), and 28,000 students attend annually. There are 20 degree-granting fields in 11 faculty divisions.

Further Reading: Basic information on the history of the University of Pisa is contained in Hastings Rashdall's *The*

Universities of Europe in the Middle Ages, the 1936 edition in three volumes edited by F.M. Powicke and A.B. Emden (Oxford: Oxford University Press, 1895; revised edition, 1936). For the history of Pisa, see D. Herlihy's *Pisa in the Early Renaissance* (Port Washington: Kennikat Press, 1973).

—A.H.T. Levi

UNIVERSITY OF POITIERS

(Poitiers, France)

Location:	In ■ mid-size provincial city of 83,000 inhabitants, 219 miles southwest of Paris.
Description:	A state institution operated under the jurisdiction of the minister of education and financed by the state, offering undergraduate, graduate, and professional degrees to approximately 22,000 students.
Information:	University of Poitiers 15, Rue de Blossac 86034 Poitiers Cedex France (49) 45 30 00

As ■ small provincial university, the University of Poitiers has endured and prospered for five centuries, due mostly to support from the city. Trough periods of revolution, reaction, and rebirth, the university has continued its educational mission. Among the notable persons associated with the university are writers Honoré de Balzac, François Rabelais, Joachim du Bellay, and philosopher René Descartes. Today, after a period of turmoil and reorganization in French education, the University of Poitiers combines the best of the old and the new. The old is embodied in the “Centre d’Etudes Supérieures de Civilisation Médiévale,” a noted institution for the study of the Middle Ages; the new is represented by the “Parc du Futuroscope,” a center for exploring and creating the future through technology.

The city has a long history. It was founded by the Gallic Pictones (hence the name), although the Romans referred to it as Limonum. The city was an early center of Christianity, with its first bishop St. Hilarius (360–367). Arian Visigoths made the city their capital, but it was conquered by the Franks in 507 and became the capital for all Frenchmen from Poitiers in 1577, in a document later known as the Edict of Poitiers.

The University of Poitiers’s origins can be traced to the political needs of the medieval French monarchy. The university owes its existence to the Hundred Years’ War (1337–1453) between England and France. During a period of defeats for the French, Paris fell to the English, along with control of the University of Paris, center of learning in France. King Charles VII was forced to establish his court in Poitiers in 1428, bringing with him those Paris faculty members loyal to his cause. Charles was anxious to counter the influence of the English and to

attract French students to learn under French teachers. Using the exiled faculty as a nucleus, he established ■ new university at Poitiers. Charles was unable to obtain formal approval for his university from the pope, however, until March 31, 1431. In that year, Eugene IV issued a papal bull conferring upon the university at Poitiers all the privileges granted to the University of Toulouse and ordering the new university to be based upon the model of that university. In 1432, the University of Poitiers was formally and solemnly opened with a charter granted by Charles VII. The French king had obtained his French university.

Like the University of Paris, the University of Poitiers was composed of four faculties—arts, theology, law, and medicine. The actual constitutional arrangements for the governing of the university, however, were a compromise between those of the universities at Paris and Bologna, and differed from those outlined in the papal bull. There was one rector for the university and two law faculties—canon law and civil law. The law students, at least, were divided into four nations—France, Aquitaine, Touraine, and Barry—to represent the geographic origins of the students. Each nation selected a rector to represent its interests in the university. Selection was based upon a public disputation in which the candidates had to debate with all comers.

The actual governing of the university was done by the rector, assisted by ■ general congregation, composed of doctors, masters, and graduates of all faculties, except arts. The choice of rector apparently rotated between the nations and the faculties. In contrast with similar universities, however, the University of Poitiers had no formal connection with the local bishop and cathedral; instead, the treasurer of the Collegiate Church of St. Hilary was named to serve as chancellor.

The University of Poitiers continued to function after the Hundred Years’ War ended and the University of Paris once again became the premier French university. One reason for its survival was the unusual amount of support it received from the city of Poitiers. By the standards of the time, the University of Poitiers was a large institution—300 to 400 students of varied background—which increased in size as time passed. To support the growing university, local residents made many generous donations. While most universities of the time had no buildings of their own, the city began building the university’s “Great School” in 1448; 11 years later, the city also built a library. Teachers at other universities were dependent upon fees paid by students for their income; at Poitiers, salaries were paid to the faculty by the municipal authorities in an effort to attract the best teachers and to

retain them. In return, the city was able to exert an unusual degree of control over the university, apparently with royal support. Because municipal authorities paid the teachers' salaries, they were also able to control who was hired and what they taught and also to correct what they viewed as abuses, such as graduation without sufficient residence or qualification. An associated college was founded in 1478 by Francoise Gillier, Lady of Puygareau and widow of an advocate-fiscal in the *Parlement* of Paris. The College of Puygareau provided for a prior and eight scholars in theology and arts.

Student life was given some structure, at least in the beginning, by the nations, which functioned as corporate social groups, theoretically representing the geographic origins of students. Germans were well represented at the University of Poitiers, and by the end of the fifteenth century, a large number were studying Roman law there. Things changed as more universities were founded, and rulers attempted to keep their subjects in their own countries. More and more students attended the institutions closest to their homes, leading to a regionalization of education. Poitiers ceased to attract foreign students such as Germans and drew more on French students from Poitou. During the sixteenth century, the student nations collapsed as meaningful groups. The authorities, who had come to view these groups as merely sources of trouble, finally outlawed them in 1629.

University education in France prior to the French Revolution was limited primarily to the wealthy and the socially ambitious. Since education, especially in law, was required for more and more positions and provided a boost to one's social standing, some faculties expanded rapidly during the seventeenth and eighteenth centuries. At Poitiers, for example, the law faculty doubled in size during the seventeenth century. Leading families were able to consolidate their status through law degrees and positions as lawyers. In smaller cities and towns such as Poitiers, lawyers became the new aristocracy and the leaders of urban society.

Although law was growing in importance, other faculties at the University of Poitiers did not fare so well during this period. It was not uncommon for some faculties to suspend teaching for extended periods of time. Most notably, the medical faculty at Poitiers did almost no teaching during the entire eighteenth century. Part of the problem may have been the small size of the medical faculty. At one point, only four undistinguished doctors comprised the teaching staff; at the same time, more prestigious institutions had over 100 doctors on their medical faculty, including several famous medical authors. Since the relative prestige of one's university played a role in one's success, there was little incentive to attend the medical faculty at Poitiers. By 1789, the only teaching faculties active at Poitiers were those of law and theology.

The French Revolution, with its emphasis on the individual and on an end to inherited privilege, saw the sup-

pression of the universities. To the revolutionaries, universities represented bastions of corporatism and established interests. In addition, lands possessed by the universities and used for their support, represented a source of wealth to be tapped by the revolutionary government, just as property owned by the church had been confiscated. In 1792, the University of Poitiers, along with 21 other universities, was dissolved. Specialized *écoles*, open to anyone with talent, and with rigorous entrance examinations, were eventually established to provide professional training in specialized areas. Even so, the revolutionary government found it necessary to allow some education faculties to continue at Poitiers.

Throughout the nineteenth century, additional faculties, especially in science, were established as required to serve the changing needs of French society. The most important development in French education in the nineteenth century, however, was the reestablishment of the universities. Facing competition from German universities, especially following the French defeat in the Franco-Prussian War (1870–71), many French legislators were eager to recreate their universities. Debate centered on what form they should take. Reformers who favored efficiency wanted only five or six institutions to serve the entire nation. Smaller provincial faculties, like those at Poitiers, could be eliminated to free resources for larger ones. If small universities were to be retained, some questioned whether they needed to have all the faculties, especially in the sciences. Members of smaller faculties were opposed to the whole debate, fearing they would be disbanded or would lose all funding. They also disliked the possible loss of autonomy, since the formerly independent faculties might be made answerable to the new university administrations.

Nonetheless, the French legislature passed an education law in 1896, establishing 17 autonomous regional universities, financed largely by the state. The various faculties in Poitiers were reestablished as the University of Poitiers. The new university was a small, but important, regional institution, offering education in many areas. On the eve of World War I, in 1914, the University of Poitiers had about 1,000 students. The faculty of letters had about 200 students, the science faculties had between 90 and 140, and the combined faculties of medicine and pharmacy had 39 students.

Through two world wars and a depression, the University of Poitiers continued to grow. Increasing numbers of women and foreign students joined the student body. Cooperative educational programs have been established with many foreign universities, including the University of Oregon, the University of Valladolid in Spain, and the University of Coimbra in Portugal. By the late 1960s, however, many French students were gripped with a growing sense that the universities were cold, sterile places, which turned out graduates unlikely to get jobs. Individual faculties remained nearly autonomous

from the university administration. The universities did not even have their own budget as a whole, since it was divided among the faculties.

Following riots by students in Paris in 1968, French education was reformed. The *Loi d'orientation de l'enseignement supérieur* of 1968 divided the old faculties into smaller departments, or *Unités d'enseignement et de recherche* (UERs), reduced the power of the Ministry of Education, and established smaller universities with strengthened administrations. The UERs were combined with existing *Instituts universitaires de technologie* (IUTs) (two-year courses of study with technological emphasis) as the basic building blocks for the universities.

While the University of Poitiers was not divided into smaller universities, it did receive a new administrative structure. Like all French universities, it is administered by three boards, composed of elected representatives of the university community and appointed members from outside academia. The first of the board of administration (*conseil d'administration*), which determines general policy for the university, votes the budget, and approves programs and degrees. The second board is the scientific board (*conseil scientifiques*), which oversees research and teaching practices in the university. The final board is the board of studies and student life (*conseil des études et de la vie universitaire*), which advises the board of administration on issues and is concerned primarily with student life in all aspects, such as the library, medical care, and sports. All three boards jointly elect a president every five years from among the faculty of the university. The president represents the university in all official acts, adminis-

ters university property, and hires all university personnel. He or she is also chair of all three boards and is responsible for law and order within the university.

In response to the increasingly technical nature of the world, the university is establishing the "*Parc du Futuroscope*," a scientific park devoted to advances in the sciences. Supporters hope to make it a center for applying science to the future. The University of Poitiers is a unique institution which remembers and honors its roots but looks to the future. It has endured through difficult times, but is establishing itself as a forward-looking institution serving the needs of its region.

Further Reading: Hasting Rashdall's *The Universities of Europe in the Middle Ages* (Oxford: Clarendon Press, 1936) is the best starting point for information specific to the founding and early years of the University of Poitiers. A more modern complement, both in coverage and in publication date, is *A History of the University in Europe*, edited by Hilde de Ridder-Symoens (Cambridge: Cambridge University Press, 1992). Other useful works that describe the French university system, with helpful information about the University of Poitiers, include L.W.B. Brockliss's *French Higher Education in the Seventeenth and Eighteenth Centuries: A Cultural History* (Oxford: Clarendon Press, 1987), George Weisz's *The Emergence of Modern Universities in France, 1863–1914* (Princeton, New Jersey: Princeton University Press, 1983), and R.D. Anderson's *Education in France 1848–1870* (Oxford: Clarendon Press, 1975).

—Tim J. Watts

UNIVERSITY OF ROCHESTER

(Rochester, New York, U.S.A.)

Location:	In Rochester, 80 miles east of Buffalo, New York.
Description:	A private university with over 9,000 undergraduate, graduate, and part-time students.
Information:	Office of Admissions University of Rochester Rochester, NY 14627 U.S.A. (716) 275-3221

Shortly after a small faculty and student body moved into a renovated hotel in Rochester, New York, and called it a university in 1850, Ralph Waldo Emerson observed that the professors of this fledgling but intrepid institution were “confident of graduating a class of Ten by the time green peas were ripe.”

While such a hope seems modest by today’s standards, Rochester was a city undergoing tremendous transformation in the first half of the nineteenth century. On the banks of the Erie Canal and the Genesee River, the city swelled during the 1820s with burgeoning industry and trade. With the new industrialism, the city filled with a restless transient population of adventurers, displaced workers, and tradesmen, who raised the ire of the city’s established classes with their rowdy behavior.

As in much of the United States, the anxiety accompanying these sweeping social changes fanned the new evangelism of the Great Revival. After the religious fervor subsided in the 1830s, Rochester’s major cultural characteristic was its plethora of churches, including several Baptist congregations. As these fiercely sectarian groups competed to attract members to their congregations, religious colleges sprang up beside the churches to provide “a Christian education for the gentleman of the particular denomination.”

A small Baptist college existed in Hamilton, New York, several miles outside of Rochester. The college began in 1820 “for the purpose of educating pious young men to the gospel ministry”; by 1846 it was chartered by the state as Madison University (later Colgate). The school, managed by the joint jurisdiction of the state Baptist Education Society and a board of trustees, was viewed by the Baptist denomination of New York as one of its proudest possessions.

Not everyone on the 146-student campus was content with the location of the school. The remote town of Hamilton lacked the facilities enjoyed by urban schools such as Brown and Yale, and dissatisfaction with Madison’s location was rife on campus. Madison trustee John Wilder, one of the most vocal proponents of moving the school, said, “We are advocating its removal on the grounds of its location, its dilapidated buildings, the badness of the roads leading to it, the smallness of its own library, [and] its distance from other large libraries.” Were Madison to relocate, Rochester would have been the logical destination. For three years “removalists” and “Hamiltonians” debated the location of the school; however, in 1849 the New York Supreme Court issued first a temporary and then a permanent injunction against removal.

The failure to move Madison to a more cosmopolitan location launched the campaign to create what would be the University of Rochester. Wilder and William Sage, the son of a Rochester boot manufacturer, began an intensive public campaign to win approval for the new school, and scoured the countryside near and far to bring in funding for the new institution, raising a grand total of \$142,000 between them.

The 24 trustees who constituted the school’s managing body met for the first time in September 1850. Assembling a faculty proved no problem, since many of the best professors from Madison University moved to Rochester. The difficulty in finding a campus for the new school was solved by the procurement of an old hotel on Buffalo Street, the United States Hotel, which had been built to serve people traveling on the Erie Canal. The professors who abandoned Madison encouraged their students to do so as well, and so toward the end of October 1850, 28 refugees from Madison converged on Rochester. Sixty students in all answered the attendance call on the first day of class, a number which grew to 82 by the end of the year. Tuition in that year was \$10 per term, with a \$2 surcharge for “incidentals.”

As the university grew, the trustees sought a permanent site for the school other than the hotel then serving as a campus. A prominent Rochester resident, Azariah Boody, offered eight acres to the east of the city as a site for the university; the trustees accepted the land in 1853 as the location for what came to be called the “East Avenue colony,” a library built some years later and Anderson Hall, named for the school’s first president Martin Anderson.

During the Civil War, the school suffered a serious—almost fatal—decline in enrollment and income as stu-



University of Rochester

dents rallied to the union cause. After Lincoln became the Republican candidate, students formed clandestine "wide-awake clubs" which held political rallies and met in the basement of school buildings for drills. President Anderson aligned himself fiercely with the union cause, but nonetheless urged students not to be moved by their

emotions. Despite his pleas, 1 out of 12 undergraduates enlisted, as well as 85 of 198 Rochester graduates.

After the war, the university remained in perpetual financial crisis, but managed to avoid "all pecuniary embarrassment," in the words of President Anderson. The university saw modest growth during these years,

including the erection of Sibley Hall (named for the wealthy Rochester benefactor Hiram Sibley) as the school library.

By the turn of the century, the city of Rochester had evolved into a robust, cosmopolitan center with 130,000 residents. Like the rest of America, the city was moving into an era of modern industrialism; the university, however, remained identified as a primarily Baptist institution, lacking a widespread appeal among the heterogeneous population of Rochester and the nation at large. After President Anderson announced his resignation in 1886, the trustees unanimously elected David Jayne Hill as president of the university in 1888 in the hope that Hill would bring to bear his administrative skills in tackling the ongoing fiscal difficulties of the school. During his tenure as president, however, deficits continued to grow and fundraising efforts foundered. He stepped down in 1896 after a brief and disappointing presidency.

Like most institutions of higher learning, Rochester faced an increasing demand from women to be admitted to the school. The 1848 Seneca Falls Convention, held a mere 50 miles from Rochester, had earlier called for equal education for women in the historic "Declaration of Sentiments," and one of the most vocal and vociferous advocates of women's rights, Susan B. Anthony, lived in Rochester. Toward the turn of the century, the chorus grew even louder. While undergraduate sentiment appeared to be against accepting women into the school, many faculty and friends of the school supported coeducation. In 1891, when Susan B. Anthony held a reception for 200 guests in honor of Elizabeth Cady Stanton, the nationally known champion of women's rights, many of the guests spoke in favor of bringing women into the school. Between 1891 and 1893, several women audited classes at the school. In 1893 Helen E. Wilkinson entered the freshman class with the tentative approval of the president. Her expenses were paid by Susan B. Anthony and some of Anthony's friends. Wilkinson had agreed not to matriculate and thus would not be eligible to receive a degree. After two years, poor health caused Wilkinson to withdraw, and in 1897 she died. In 1898, the trustees voted to make the university coeducational if those in favor of college training for women could raise \$100,000. When she heard this news, Anthony reportedly cried, "This is better news to me than victory over Spain. It is a peace-victory, achieved only by the death of prejudice and precedents." In September 1900, 33 women registered for classes.

In 1900, Rush Rhees was inaugurated as president of the university. During his tenure, Rhees oversaw some of the most sweeping changes yet in the university. World War I saw the university's enrollment—and subsequently its income—fall sharply. Rhees and the trustees reacted by aggressively pursuing donations from bene-

factors. Rhees made the acquaintance of George Eastman, who had begun retailing cameras in 1888 and by the turn of the century had become one of Rochester's wealthiest citizens. While his total contributions to the University of Rochester exceeded \$51 million, Eastman is perhaps best known for the contributions that founded the Eastman School of Music and the School of Medicine and Dentistry.

With plans for the Eastman School of Music completed by 1919, the first classes were held in 1921. Though Eastman described himself as a "musical moron," he nonetheless felt that music deserved an integral role in the leisurely pursuits of an advanced industrial society. So strongly did he hold these sentiments that Eastman contributed nearly \$10 million to the music school and expressed his dedication in the inscription atop the Eastman Theater, "For the enrichment of community life."

Rochester's School of Medicine and Dentistry came to be when Eastman dedicated \$30,000 per year to the Rochester Dental Dispensary, whose primary purpose was the care of poor children's teeth. At the same time as Eastman was making lavish contributions to the dispensary, Dr. Abraham Flexner—the author of a scathing indictment of the U.S. medical establishment in 1910—approached Rhees with the proposal for a medical school at Rochester.

The three met in February 1920, and later in the year publicly unveiled the project, a school for both the study of general medicine as well as dentistry. Contributions from the Strong family of Rochester funded the Strong Memorial Hospital, allowing Rochester to claim the distinction of having the first medical school in the country with both a school and a hospital. In 1925, instruction began for the first students, and in January 1926, Strong Memorial Hospital treated its first patient, Harry Commons, who was afflicted with stomach pains. Frightened by the number of attentive nurses and doctors at hand, the patient promptly left the hospital, only to return the next day for (successful) treatment.

The suggestion had been made in 1920 that perhaps the university had outgrown its campus on Prince Street, and a new movement began urging the university to relocate. George Todd, a wealthy Rochester resident, proposed the idea of moving the university to the grounds of the Oak Hill Country Club by the Genesee River several miles from the city. Rhees, Todd, and over 50 powerful Rochesterians met for a "reconnaissance" talk at Todd's home to discuss the expansion. They decided that \$10 million would be required to erect a new campus, toward which Eastman donated \$2.5 million. A fundraising campaign with the slogan "Ten Millions in Ten Days" sought donations from alumni and local citizens. The "River Campus" groundbreaking was in 1927, and the new campus was declared completed on a foggy October day in 1930.

Eastman, who committed suicide in 1932 at the age of 79, bequeathed the majority of his \$17.6 million estate to the university, where it passed into a University Endowment Fund. In 1933 President Rhees wrote, "Income from these designated gifts has saved us from dire financial trouble during this year of Universal distress." Despite the munificence of the university's donors, the burden of the president's office had grown heavy for Rhees, now in his seventies. He announced his resignation in 1930, and in 1934 the presidential post passed to Alan Valentine, a graduate of Swarthmore College and a Rhodes scholar. Eastman's bequest allowed the university under Valentine's guidance to envision a more prosperous future, including the growth of graduate studies, expansion of scholarships, and a more comprehensive plan of study for the arts and sciences.

During World War II, the battles overseas permeated every aspect of university life. As in the rest of America, the university practiced drills, rationed, and sold war bonds. By 1943, one-third of the class of 1946 had entered the armed forces. The drop in enrollment, however, was offset by the arrival of the V-12 corps on campus, students who combined academics with training for the navy. Approximately 800 V-12 members arrived at Rochester, ushering in "naval and marine standards of discipline" to the campus throughout the course of the war. At the conclusion of the war, the university saw a remarkable inrush of students. While 5,600 were attending the university prior to Pearl Harbor, enrollment reached 6,420 by 1946, and 9,444 by 1950. University spending was on the increase as well, largely because of the huge growth in research funded by the government, industrial firms, and educational foundations during and after the war.

President Valentine unexpectedly announced his resignation in 1949, and a trustee search committee began the process of finding a replacement. That replacement was found in Cornelis W. de Kiewiet. Though born in the Netherlands, de Kiewiet was raised in South Africa, studied in Paris and Berlin, and chaired the modern history department at Cornell before assuming the Rochester presidency in June 1951. Under de Kiewiet's tenure, the Men's and Women's Colleges—formerly separated between the River Campus and the Prince Street Campus—were integrated into a single College of Arts and Sciences. To accommodate the consolidation of the two bodies onto the River Campus, the college underwent a major expansion, including the building of new residence halls and a greatly expanded offering of classes, including instruction on non-western civilization.

Student interest in politics at this time was tepid. While, during the late 1950s, civil rights became an issue with the forced integration of previously all-white fraternities on campus, not until the early 1960s did students begin to respond to the new political currents running through the nation. The year 1960 saw the

establishment of a SANE (Committee for a Sane Nuclear Policy) chapter. In 1961, students began to picket Woolworth's in solidarity with southern lunch-counter protesters, and they protested at movie houses in Rochester whose southern franchises remained segregated. For the first time, students became active in the administration of the university, protesting tuition increases in 1961 and the de-emphasis on undergraduate classes. The dissent among students led to the formation of a Faculty-Student Policy Review Group to consider the sentiments of the students and make recommendations to the administration.

When W. Allen Wallis became president in 1963, one of his first acts was to confer an honorary degree on former president of the United States Dwight D. Eisenhower, who became the first former United States president so honored by the university. It fell to Wallis to steer the university through one of the most turbulent periods in American history, the Vietnam War era. Though many radicals and some conservatives were unhappy with Wallis's declaration that the campus should be open for discussion of all views but should avoid a commitment to political goals, Rochester emerged relatively unscarred from that era.

Until 1975, Rochester had always selected its presidents from a pool of candidates from outside the university. This tradition ended when Robert L. Sproull, who had come to Rochester in 1968, was inaugurated as president in that year. Sproull's strength as a fundraiser was evident when a campaign to raise \$102 million actually raised \$108 million. His years also saw Rochester taking a lead in medicine and in research. During his tenure, the Strong Memorial Hospital opened, the Cancer Center was constructed, and the Laboratory for Laser Energetics became a leading center for laser research.

G. Dennis O'Brien, president from 1984 to 1994, presided over a university whose undergraduate applications nearly doubled and whose student body became more diverse. Among the innovations O'Brien introduced was the "Take Five" program, which permitted students to take a fifth, tuition-free year while working for the bachelor's degree. He was instrumental in the establishment of the Frederick Douglass Institute for African and African-American Studies and the Susan B. Anthony Center for Women's Studies, both of which actually opened shortly after he retired from office. Another high point for the university during O'Brien's administration came when, in 1990, *U.S. News & World Report* ranked Rochester among the nation's top 25 universities; three years later the magazine placed it among the top 25 "best values" among America's universities.

In the years intervening between the time that Ralph Waldo Emerson made his observation in 1850 and the end of the twentieth century, the university has graduated over 75,000 living alumni, among them Nobel laureates,

Pulitzer Prize-winning poets, and world-class musicians. Were Emerson able to return to Rochester in spring when the peas are ripe, he would hardly recognize the school that has risen from such humble beginnings.

Further Reading: For an excellent account of revivalism in Rochester, read *A Shopkeeper's Millenium* by Paul E.

Johnson (New York: Hill and Wang, 1978). One of the most comprehensive histories of the Univesity of Rochester available is *A History of the University of Rochester: 1850–1962*, by Arthur J. May (Princeton, New Jersey: Princeton University Press, 1977).

—Theodore Emery

UNIVERSITY OF ST. ANDREWS

(St. Andrews, Scotland)

Location:	St. Andrews, Scotland, 45 miles north of Edinburgh.
Description:	A coeducational institution enrolling 5,400 students in undergraduate and graduate schools.
Information:	Public Relations College Gate St. Andrews Fife KY16 9AJ Scotland (01334) 462530

Established as the outcome of a rise in nationalism and more specifically due to the exclusion of Scottish students from the universities of Oxford, Paris, and Orléans, the University of St. Andrews had its beginnings when a cadre of educators and scholars driven from France decided to locate a center of higher education in the coastal city of Fife, near Edinburgh in eastern Scotland.

Subsequently founded in 1410, the University of St. Andrews stands as the first university in the country's long history. The need for Scotland's premiere university came out of the period between 1378–1429, referred to in Europe as the "Great Schism." During this era, Scotland and France gave loyalty to Benedict XIII, the antipope of Avignon, France, in clear contrast to England which conformed to the doctrine of Pope Martin V in Rome. Scottish students traveled to Paris for their university training, but in 1408, when France abandoned its devotion to Benedict XIII, the antipope moved to Spain. Scottish scholars found themselves in a difficult position.

Learning centers in Spain were few and mediocre, and Scotland's remaining loyalty to the antipope was the antithesis to France's new consecration of the Roman pope. The University of Paris therefore made it difficult for Scottish students to continue, thus serving as impetus for Scotland to create a university of its own.

More a small association of scholars than a center of higher learning at the time of its establishment, the University of St. Andrews was incorporated in 1411 by charter and conferred with full university status two years later by papal bulls issued by Benedict XIII. The bulls gave the University of St. Andrews title to teach a number of faculties, including canon and civil law, theology, medicine, and the arts. It should be noted that despite its prior and unswerving devotion to Benedict XIII, the Scottish Church in 1417 was persuaded by the masters of the Uni-

versity of St. Andrews to break away from the antipope and pledge faith to Pope Martin V. This desertion of Benedict XIII was likely based on pure economics, seeing that Benedict had been deposed in 1417, and no longer offered much usefulness to his followers.

Over the course of the next century, three colleges were developed on university premises. St. Salvator's was established in 1450, followed by St. Leonard's in 1512 and St. Mary's in 1537. By 1553, the three colleges had received a papal grant but, along with all other European colleges, suffered the consequences of the Reformation.

The Reformation, a period of religious resurgence in the European nations out of which Protestantism was created, had authorities in some cities reappropriating revenues previously intended for university theologians. Moreover, this intense period of religious, political, and economic turmoil manifested in growing ecclesiastical differences, prompting rapid student decline in many universities. Therefore, following the Reformation, the University of St. Andrews, a learning center predicated on Catholicism, lost its dominance as an ecclesiastical giant. By 1579, the colleges of St. Salvator's and St. Leonard's took the generic monicker of the Colleges of Philosophy, and the College of St. Mary's was limited to the study of reformed theology.

For the next century, the University of St. Andrews made great gains in reestablishing itself as a college of preeminence. During this time, the university boasted teachers the likes of renowned Presbyterian leader and scholar Andrew Melville and historian George Buchanan. Many of the college rectors have been equally well known, including novelist James M. Barrie and former South African prime minister Jan Christian Smuts.

By 1747, St. Salvator's and St. Leonard's colleges had merged to form the United College, an amalgamation that continues today. The United College houses all arts and sciences and the College of St. Mary's remains as the Divinity College. These buildings and all other college property has, since 1858, come under the charge of a supreme governing body of some 25 members culled from within the university and local municipal associations. These university overseers saw an opportunity to enhance the college's reputation as a distinguished learning center when in 1897, Queen's College in Dundee, Scotland, joined the University of St. Andrews to establish a "Conjoint School of Medicine." That association came to an end in 1967 when a separate University of Dundee was established.

The university has been coeducational since 1892; the first century of female matriculation was celebrated in



University of St. Andrews

1992 when two Women's Centenary Research Fellowships were established in the School of Physics and Astronomy and the Scottish History Department.

Today, the University of St. Andrews retains acclaim for its achievements in history, the humanities, and theology, but also boasts its reputation as a center for research in laser and solar physics, biological chemistry, neuroscience, psychology, and computer science. While these subjects may be modern, many are taught in buildings dating back to the fifteenth century. Located in the town center of St. Andrews, the university's library, administrative buildings, arts schools, and lecture halls stand in St. Salvator's Quadrangle on North Street, while St. Mary's College, off South Street, has its own quadrangle. One-half mile from the town center is where more modern campus buildings are situated, in which the physical and mathematical sciences are taught.

The university is just one of several internationally known sites in a community with a relatively small population of 16,000. Once an important medieval town and fishing port, St. Andrews is perhaps best known as the

home of the Royal and Ancient Club, a prestigious golf authority established in 1754. Among the city's other notable landmarks are ruins of Scotland's largest cathedral and St. Andrews Castle.

Tradition as old as some of the town's landmarks plays a significant part of student life at the University of St. Andrews. Many scholars in the faculties of arts and science wear a scarlet undergraduate gown during special events. The robe-like costume dates back to the seventeenth century and infers degrees of seniority, depending on how far it is worn off the shoulder. Its present-day quality and texture saw beginnings in 1838 when students, as testimony to the cold weather of Scotland, made an appeal to university authorities to change the overgarment from a thin robe to a thick cloak. Students wearing the colorful gowns can be seen on Sundays during the Pier Walk when they stroll along the town pier.

Two other long-standing customs are popular on campus. Raisin Monday is based on a tradition that couples third- and fourth-year students with first-year students. The older students act as "parents" to the younger charges

and as such help them better settle into campus life. Traditionally, the first-year students present their older guardians with a bottle of wine on Raisin Monday, a gift that has seen transmutation since the original gratuity of a pound of raisins.

The “parents” issue a receipt for the wine to the first year students. The acknowledgment, scribed in Latin, can be written on anything. Moreover, “parents” have the authority to dress their “children” in clothing inappropriate to the climate and march them through town. In contrast, the Kate Kennedy procession serves as more of a historical celebration. Each April, students dress to depict

the individuals and events that have shaped both the city and University of St. Andrews.

Further Reading: For general background on the country, region, and town, see William Craft Dickinson’s “Scotland from the Earliest Times to 1603” (London and New York: Thomas Nelson, 1961).

—Sharon Nery

UNIVERSITY OF SALAMANCA

(Salamanca, Spain)

Location:	In the old section of Salamanca, 120 miles west-northwest of Madrid.
Description:	A state institution under the jurisdiction of the Ministry of Education and Science, the university enrolls approximately 25,290 traditional and 25,290 correspondence students.
Information:	University of Salamanca Patio de Escuelas 1 37008 Salamanca Spain (923) 214518

The exact founding date of the University of Salamanca is unknown, but it is estimated to be in the year 1200 or shortly thereafter. What is certain is that the university is the oldest in Spain and one of the oldest in Europe. One of the earliest records of the establishment of the University of Salamanca dates from 1243. In a charter issued in that year by Ferdinand the Saint of Castile, the university was taken under the protection of the crown and its privileges confirmed. Although the university had existed for nearly a half a century, this year is usually considered its founding date.

Fortunately for the university, Alfonso X ascended to the Spanish throne during the middle of the thirteenth century, the important formative period of the University of Salamanca. Alfonso, known as "the Wise" or "the Learned," was a tremendous supporter of scholarship and the arts. Alfonso's interest in creating an educated populace helped the University of Salamanca grow. In 1252, the king continued the privileges granted to the university nine years earlier; this charter, confirmed by Pope Alexander IV, granted a substantial income to support the university. In the charter, the pope also gave graduates of the University of Salamanca the right to teach in any European university, except those in Paris and Bologna.

Alfonso the Wise is famous for his own writings, in addition to those produced under his patronage. In his administrative code, called *Siete Partidas*, Alfonso devotes an entire chapter to education. This part of the code presents an ideal for university organization, although it cannot be determined how much the University of Salamanca actually conformed to the idea. Under Alfonso's code, the university community enjoyed certain privileges as well as exemptions from regular laws. Known as the *fuero academico*, this part of the code

stated that students and professors were outside the jurisdiction of the regular courts. The students formed a self-governing body and elected a rector as their leader.

Although the university gained the support of both the crown and the papacy in words, actual financial assistance was relatively infrequent. Often grants from the king were promised but never paid. Professors did not receive their salaries and so refused to work. As a result of these troubles and especially after Alfonso's abdication, the university came close to financial ruin and closure during the last half of the thirteenth century.

The university found new life in the beginning of the next century under the reign of Ferdinand IV. In 1300, the king granted to the university one-third of the tithes collected in the Salamanican diocese. Called *tercias reales*, these tithes were previously earmarked for church construction and maintenance. Although it took more than 100 years for the revenues to be collected by the school on a permanent basis, the *tercias reales* provided the main financial support for the university until the nineteenth century.

For the first century of its existence, the University of Salamanca felt the influence of the monarchy more than that of the church. The papacy would approve the changes proposed by the king, but the impetus for reforms came from the crown. In the fourteenth century, however, the situation reversed. Four succeeding popes reorganized the university's departments, constitutions, and finances in various ways.

Pope Clement V authorized the establishment of chairs of Hebrew, Arabic, and Chaldean. He also granted additional revenues to the university. Pope John XII reorganized the administration of the university in 1334. He appointed the *maestrescuela* of the cathedral school as chancellor of the university. The office of the *maestrescuela* had recently assumed judicial powers over the *fuero academico*, the special privileges given to the university. From this point on, the *maestrescuela* slowly became the direct arm of the pope in the administration of the University of Salamanca.

Pope Benedict XIII was responsible for starting major changes at the university in the late 1300s. Benedict, the Spanish antipope, added new chairs, increased salaries, and reformed the university's constitutions. The modern statutes reflected the acceptance of Roman law in Spain. The changes made by Benedict lasted only a short time; soon after the new statutes were approved Castile transferred its support from Benedict, the antipope, to Pope Martin V. Martin, who upheld many of Benedict's directions for the university, later issued a new set of statutes.



University of Salamanca

The new constitution, which was issued in 1422, was the last given to the University of Salamanca by a pope.

Under Martin's direction the university had three leaders: the *maestrescuela*, the rector, and the *primiciero*. The *primiciero*, who was elected by the doctors and masters to preside over their meetings, was the least important and held the least power of the three leaders. The rector was the spokesperson of the students. The office alternated annually between natives of Castile and Leon. The rector, elected directly by the students, was obligated to swear obedience to the pope. The *maestrescuela* was the most powerful of the three heads of the university. The powers first granted to this position by Pope John XII had increased over the past century, and by 1422 the *maestrescuela* had become the guiding hand of the university. The direct representative of the pope, the *maestrescuela* acted as the judge for the university, granted degrees, and enforced the constitution.

In addition to these three leaders, the university was directed by a council, also elected by the students. The council of 20 *definitores*, consisting of 10 chairholders and 10 students of noble birth, directed the day-to-day business of the university and selected the *maestrescuela*, who was then confirmed by the archbishop of Salamanca and the pope. For the next 50 years this basic organization of the University of Salamanca was directed by two major forces: the students, who were represented by the rector and the *definitores*, and the church through the *maestrescuela*. The Spanish monarchy, which had enjoyed some control over the university in its first century of existence, had slowly lost its power until the 1470s.

The ascension of Ferdinand and Isabella to the throne in 1474 signaled the end of the line of weak Spanish monarchs. For the University of Salamanca, this marked the beginning of the process of modernization. The royal power merged with the forces of the students and the pope, resulting in a more contemporary university. The resumption of royal jurisdiction over the university meant that the powers of the students and especially the papacy were reduced significantly. It also meant an end to some of the abuses that had infested the university. Ferdinand and Isabella issued their first set of *cedulas*, or royal decrees, in 1480. The *cedulas* reasserted the crown's power and addressed the abuses.

A second set of statutes issued by the Catholic monarchs in 1492 further asserted their powers and limited those of the pope. Under the *Concordance de Santa Fe*, the jurisdiction of the *maestrescuela* was severely curtailed. The power that the Spanish crown exerted over the university continued to increase after Ferdinand and Isabella. Royal jurisdiction reached a climax in 1528, when Charles V claimed the right of appointing the *maestrescuela*, a move severely restricting the church's control of the university. By the end of the 1520s, the crown had a hand in virtually every aspect of university activity, including requirements and fees for degrees, content

of courses, examinations, texts, filling of chairs, and officials' conduct.

The sixteenth century saw a further consolidation of power in the monarchy, not only at the university but across the entire country. The Spanish Inquisition was an iron fist holding all of Spain in its grip from the end of the fifteenth century until the beginning of the nineteenth century; the University of Salamanca was securely clenched there. During the Inquisition some of the most infamous events in the history of the university occurred. Christopher Columbus presented the results of his voyages to a group of professors at the University of Salamanca; they scoffed at Columbus's idea that the world was round. Legend says that "they denied the earth was round, for if this were so it would have no stability. Columbus confounded them by tapping the famous egg . . . until the shell flattened at the pole and thus made it stand upright." Despite the erroneous judgment made by the professors in Columbus's case, the University of Salamanca was renowned for attracting the most learned men in Europe to teach there. Famous faculty members included Ignatius de Loyola, founder of the Society of Jesus (Jesuits); Calderon de la Barca, poet and dramatist; Peter Martyr, Dominican friar, who is the patron saint of the Spanish Inquisition; Copernicus, the astronomer; Nebrija, the humanist and writer; and Vesalius, the Belgian anatomist.

The famous writer Luis de Leon also taught at the University of Salamanca. One of the most brilliant literary voices of the Spanish Renaissance, Leon felt the brunt of the Inquisition during his tenure at Salamanca. Leon was an Augustinian monk, and so was denounced by the rival Dominicans, who were the executives of the Inquisition. Leon was imprisoned for nearly five years, during which time he wrote his prose masterpiece, *The Names of Christ*. Leon was never tortured by his Dominican captors, and although he was unjustly imprisoned, he eventually obtained justice. After he was released, the University of Salamanca welcomed the poet back, although he was not reappointed to the same chair he had held prior to his imprisonment, since it had been filled by someone else. Instead, Leon received a chair in another faculty. The classroom in which he lectured still stands today; the Hebrew text inscribed above the door translates, "Happy are thy men, happy are these thy servants, which stand continually before thee and hear thy wisdom."

Imprisonment of brilliant professors was not the only indication of the decay of the University of Salamanca during the Spanish Inquisition. Studies suffered tremendously because of the suffocating and closed-minded atmosphere. The statutes of the university were revised several times throughout the sixteenth and into the beginning of the seventeenth century. These statutes continued to reflect the university's domination by the crown that had begun with Ferdinand and Isabella. The royal statutes that were issued in 1538, 1561, and 1625 outlined the

basic administrative organization of the university. These constitutions, each of which built upon and complemented the preceding ones, directed the course of the university until 1770.

Although the Inquisition severely affected the university, this period was not entirely detrimental. Most of the buildings of the present school were constructed during this time. The main facade is one of the most beautiful and notable examples of Spanish Renaissance decoration. The Plaza Mayor, which has been called "one of the lordliest public squares anywhere," is home to glorious arcades and staircases.

The university chose to focus on teaching traditional law and theology, while the rest of Europe was teeming with scientific and artistic advances. Scholars at the University of Salamanca were so preoccupied with defending Catholicism that they ignored the important intellectual confrontations of the Enlightenment that were occurring throughout the rest of Europe. When, to scholarly failures was added abusive administrative practices, such as favoritism in professors' salaries and appointments, the university experienced a steep decline.

Troubles extended beyond the classrooms and into the city of Salamanca. Students and townsmen had habitually feuded since the early days of the *fuero academico*. By the 1600s, the university had gained virtual economic and judicial independence from the city. Scholars had always enjoyed special privileges, including being exempt from many taxes and tithes. The university controlled its own meat and wheat supplies and also enjoyed rent exemptions. Townspeople were understandably irritated by these favors. Tensions climaxed in the Great Riot of 1644. One November night, a fight broke out in the streets of Salamanca between a group of students and townsmen. The students killed one of the citizens, and the townsmen captured and tortured one of the students. The students, vastly outnumbered, retreated; citizens called by the alarm ransacked the students' quarters and took captive those who remained. The Salamancans waged another attack on the cloistered students the following day. The students fled again, tried to regroup, and were finally pacified by university and town officials. After the student who was captured first had been hanged, and several townsmen sentenced to public whipping, the volatile atmosphere subsided, but the rivalry between the city and the university continued.

The decline of the university endured into the early eighteenth century. Scholarship had decayed to a pathetic state. Classes were plagued by absenteeism by both students and professors, and, by 1736, even the requirements for graduation were reduced. In the 1760s and 1770s reforms were initiated by the monarchy and by the university itself. This reform movement culminated in the Plan of Studies (*Libro de Claustros*) of 1771. Under this plan, almost the entire university became more liberal in its orientation, even including its textbooks.

Although the reforms were far-reaching, further changes were necessary to make Salamanca a more modern university. The department of medicine was the spark of the second series of reforms. The medical school had been threatened in the late 1790s by a proposal to centralize all of the Spanish universities' medical departments. Under the United Medical Faculty, the university would be little more than a glorified prep school. The University of Salamanca vehemently opposed the plan. Its department of medicine united to fight the United Medical Faculty. Although the United Medical Faculty was created, the university's fight worked—Salamanca was under merely nominal control by the group. The United Medical Faculty lasted only until 1801, but the consolidation helped to modernize, to liberalize, and to lead the way to broader university reforms.

One of those broader reforms was the new plan of medicine for the university that was adopted in 1804. This led to the university-wide revised Plan of Studies in 1807. The new plan did not reflect an enlightened shift like that proposed in the plan of 1771; the 1807 Plan of Studies was a more radical administrative reorganization. Under the new plan, more emphasis was to be placed on science, law, and Spanish. The new Plan of Studies did not have a chance to prove its effectiveness. Shortly after the plan was passed, Charles IV abdicated, and Ferdinand VII ascended the throne. After the French invasion of 1808, the combination of war and poverty devastated the university. During the war, the University of Salamanca completely closed. Any reforms that could have moved the university out of its decline were thwarted. When it opened again, the university was a completely different and modern nineteenth-century institution.

War provided another dramatic moment for the University of Salamanca over a century later. In the opening days of the Spanish Civil War, the university witnessed a chilling standoff between the Falangist general Millan Astray and the aging nationalist Miguel de Unamuno, for 35 years rector of the university. In a speech at the university in October 1936, Astray compared Catalonia and the Basque provinces to cancers in the body of Spain. Upon hearing this, Unamuno stood up and denounced Astray. This emotional outburst was the last time the frail Unamuno spoke in public.

This scene was but one of many dramatic moments in the history of the University of Salamanca, an institution that has been intimately tied to the ruling powers of Spain for over 700 years. In its early years, the university was controlled alternately by the students, the church, and the monarchy. It was one of the only universities in Europe during its glory days in the Middle Ages. Today the university has been called "just another provincial school," but if only because of its long and rich history, the University of Salamanca ranks among the grandest in the world.

Further Reading: George Addy's *The Enlightenment in the University of Salamanca* (Durham, North Carolina: Duke University Press, 1966) focuses mainly on the years from 1740 to 1808. The introduction contains a brief but comprehensive account of the early years of the university. Alfonso Lowe's *The Spanish: The Intrepid Nation* (Madrid: Gordon Cremonisi, 1975) is primarily concerned with the arts and letters of the Spanish Renaissance, but it also provides some

information about the university. More a guidebook than a historical text, Dorothy Loder's *The Land and People of Spain* (Philadelphia: Lippincott, 1972) nonetheless mentions the city and the University of Salamanca.

—Cindy Mertz

UNIVERSITY OF SEVILLE

(Seville, Spain)

Location:	Seville, Spain, the capital of the province of Andalucia in southern Spain.
Description:	A state institution under the jurisdiction of the Ministry of Education and Science, enrolling approximately 34,000 in undergraduate, graduate, and professional schools.
Information:	Universidad de Sevilla Calle San Fernando 4 Sevilla Spain (954) 218600

The creation of a school in Seville was first proposed by King Alfonso X (1252–84), the ruler of Castile and Leon. Called “the Learned” or “the Wise” because of his patronage of scholarly pursuits, Alfonso had a special fondness for the city of Seville. The city was the most frequent seat for the king’s court, which at one time resided there for eight consecutive years. One of Alfonso’s most important contributions to Spanish arts and letters was his support of Arabic translations. He commissioned scholars to translate important works from Arabic into Latin. A long tradition of such translation in Toledo had existed since the twelfth century. Translators commissioned by Alfonso also worked in Toledo, but they were independent from the so-called Toledan School. Alfonso had ideas of founding a similar school in Seville that would serve not only as a center for translation, but as a general school for Latin and Arabic. Latin was needed to understand church matters while Arabic was needed for scientific and political reasons—manuscripts about astronomy, medicine, agriculture, and geography were all written in Arabic.

Alfonso first proposed the idea of a school in 1256, and a papal bull was secured in 1260 for the establishment of one in Seville. Soon more serious events, such as his election to the throne of Germany, disagreements with his sons, and fights with other principalities, came along to occupy the monarch, distracting him from thoughts of promoting scholarship. Alfonso X died in Seville without ever realizing his dream of establishing a school there.

After Alfonso came four kings of diverse character, none of whom promoted a school. After that, the court moved away from Seville. No longer the largest residence of the kings, the city’s grandeur declined as did local interest in letters. Part of this decline was assuaged by the founding of the Colegio de San Miguel, the oldest school

in Seville. It educated young choral assistants, first in Latin and humanities, then in philosophy or liberal arts, and then in religion. Later students learned about music and Gregorian chant. This was the only school in Seville until the reign of Henry IV.

Henry IV was succeeded on the throne by Ferdinand and Isabella, who lived for a time in Seville. Ferdinand and Isabella made Seville into the center of commercial activity generated by exploration of Africa and the Americas. Amid growing prosperity and splendor, interest was renewed in the establishment of public schools.

At that time, Sevillian youths who wanted to pursue scientific or other learned careers had to travel long distances to obtain the proper training and education. Those who stayed in Seville did not receive an education and were limited to lower-class, nonprofessional occupations. However, many families could not afford the expense of an extended journey. Such travel was dangerous, and many of those who left Seville to become doctors, lawyers, or clergymen never came back. The city was in danger of slowly losing its brightest and most promising youth to cities with universities. For these reasons, the city leaders recognized that a university was necessary to perpetuate the emerging glory of Seville.

Two members of the city council, Archbishop Diego Deza and Rodrigo Fernandez de Santaella, were very interested in founding a school in Seville. Moreover, neither wanted to concede to the other the fame and renown that would fall upon one who established a place of higher learning, and so a long and bitter fight ensued between the two sides. Santaella, after much perseverance and personal expense, finally acquired, in 1472, the first buildings for what was to become the Colegio Mayor. The papal bull for the founding of this university was asked for in 1502 and granted by Pope Julius II in 1505. It is this institution that came to be known as the University of Seville. Diego Deza obtained another bull for the founding of an ecclesiastic school in 1516. The two men and their respective schools remained bitter rivals, arguing over who had more authority to grant degrees and whose courses of study were superior.

The school founded by Santaella, the Colegio y Universidad de Santa Maria de Jesus, was to teach arts, logic, philosophy, theology, canon and civil law, and medicine. By means of the 1505 papal bull, Santaella was given the right to form the university’s constitution, and church benefactors were appointed to support the students and teachers. A second papal bull, granted in 1508, said that a degree from the University of Seville carried with it the same prestige and legitimacy as a degree from any uni-

versity in the kingdom. This raised the university to the same level as the esteemed University of Salamanca, which had been the country's premier institution of higher learning for more than 250 years.

Although there was much enthusiasm for establishing a university in name, the real work of building and opening the school was not undertaken with so much pleasure. The constitution was not finished until 1509, and it was another seven years before the university existed legally. In 1516 the university finally accepted its first students; 17 were admitted on scholarships: 10 to study theology, 6 for law, and 1 who was as yet undecided. Only two professional chairs were established at first, one for theology and one for canon law, but before long other chairs were filled, and the university could offer a true general education.

In its early years, the university had numerous problems: incomplete buildings, uncertainty about the legitimacy of its degrees, rights and privileges questionable in the eyes of the monarchy and the church, and competition from other, more established, schools. As a result, it did not attract many students, and certainly not the brightest among the eligible youth.

The university slowly began to increase its financial strength, and consequently its student body, studies, and prestige. Two faculty members, Alonso de Campos and Doctor Sarmiento, helped the university to raise adequate amounts of money. The school grew, and in 1551 it officially became a university.

Within about 30 years the University of Seville was in a state of disorder. A papal bull issued in 1545 gave the administration the right to revise or add to the university's statutes whenever it deemed necessary. Minor chaos ensued, resulting in a school that was overburdened with debts and had divided academic departments.

Eventually, a commission was established to reform the university's statutes. Comprised of doctors, teachers, and other learned men, the commission's revisions were accepted and recognized by papal bull in 1621. This reform resulted in many improvements to the university, although many shortcomings remained. Latin, rhetoric, and poetry were not taught at the university—a surprising omission in a city that prided itself on its achievements in the arts and humanities.

Another serious fault of the university was in its religious education. At the more famous divinity schools, the university was located in the heart of the religious community. In Seville, the divinity students and faculty went to the university for classes but lived in distant convents. This made the religion department less powerful and prestigious than the general education department, which led to great rivalry between the two sides.

The university's focus was on practical and scientific studies. Rapid advances were being made in physics and natural sciences in the seventeenth century. Furthermore, the founders of the university were primarily concerned

with providing an education that was related to everyday life. Thus, the school taught formulas rather than theories, and physics instead of metaphysics. The university's focus on practical education was explained in the statutes of 1621, which even stipulated that certain authors were never to be taught at the school.

Fighting among the various schools in Spain was fierce throughout the seventeenth and early eighteenth centuries. Each was connected to a different faction of the Catholic Church, a factor which gave rise to disputes not only over church doctrine, but about the teaching of church doctrine. Schools quarreled over whose courses were more fulfilling, whose professors were more respected, and whose degrees were more prestigious. This factionalism infected not only the religious departments of each school, but the arts, sciences, law, and medicine divisions as well. Such animosity, coupled with the fighting among departments at the university, led to a volatile atmosphere. In such a situation, academics were bound to suffer. By the middle of the eighteenth century, scholasticism and the arts in Seville were in a shambles.

The job of revitalizing education in Seville fell into the hands of Pablo Olavide, an official who came to the city government with an interest in both learning and public administration. He wrote a scathing indictment of the condition of the city's schools, which was presented in 1768. In this mandate, he emphasized the divisiveness and pettiness that plagued Seville's learned community. Spain was split into factions of many kinds, Olavide noted. It was a country divided by geography, language, religion, and social class. This divisiveness was draining the country of its lifeblood. Professors and, consequently, students at the universities were more concerned with promoting the doctrines of their own group and disparaging the views of other factions than with teaching basic fundamentals of education.

Olavide declared that universities in Spain were concerning themselves with frivolous and useless questions, a serious mistake in a time when knowledge was flourishing throughout the rest of Europe. Spanish youth were poorly taught and carried the lack of education to their future careers. These businessmen, lawyers, government officials, artists, doctors, and clergymen had been educationally corrupted, and the professional life of the country suffered as a result.

In response, Olavide proposed that the University of Seville occupy the old building that the Jesuits had left vacant upon their desertion of the city. The religious and secular parts of the university were to be separated; the university would be located in the basement and the seminary on the higher floors. The seminary actually served as a kind of boarding school for students with severe discipline problems. Olavide also proposed a new structure for the government of the university. A rector and three counselors would be elected periodically, and treasurer and secretary would be permanent positions to provide

some continuity. Olavide also restructured the pay scale for professors and administrators and redesigned the courses of study.

These mandates were well received. In the following year, 1769, the university was reestablished and confirmed by papal bull. The University of Seville entered a new period of prosperity. The departments of theology, law, and medicine attained a new prominence and attracted illustrious professors to the faculty. Because the textbooks that had been used previously were grossly outdated, the most learned men of Spain were recruited to write new texts that would complement the courses taught at the university.

During the reign of Carlos III (1759–88), university reforms swept through the entire country. Rights, privileges, rules, and tuitions were standardized at all universities in Spain. During the same period, the University of Seville continued to grow. The department of mathematics was established and a library was opened; arts and literature flourished. The college of law was reorganized, an event that led to the reformation of the Sevillian bar.

Another series of reforms came after much political turmoil—the abdication of Carlos IV, the war for independence, and the revolution—that upset the course of learning at the university. From 1820 to 1823, three sets of university reforms were passed. The University of Seville initially profited from these reforms and, as a result, enrollment increased substantially. Chemistry and history departments were added and new equipment was acquired for the physics and mathematics departments. The college of pharmacy became accredited.

The prosperity did not last long, however. Studies and morale declined so rapidly that 20 years later more reforms were needed. The university counselor, Nicolas Maestre, was primarily responsible for the moral rejuvenation of the university. He reformed discipline and made examinations and grades more rigorous. Maestre stimulated an appreciation of good scholarship and a feeling of cooperation among students and faculty members. Under the direction of Maestre, the physical and intellectual splendor of the University of Seville also increased. New

buildings, lecture halls, laboratories, and auditoriums were constructed, and existing structures were improved. Modern furniture and laboratory equipment were bought. The botanical garden was improved and the library was opened to the public.

Today, some of the university's buildings number among the greatest architectural and artistic attractions in Seville. The old university church, designed by F. Bartolome Bustamante, features Ionic columns and a sculpture of the Madonna and Child by Bautista Vazquez. Its paintings, sculptures, and funeral monuments are also of special note. The marble tombs of Don Fadrique Enriquez and dona Catalina de Ribera are very impressive, among others. One of the university's divisions occupies a former tobacco factory with a peculiar past. The old factory, which encompasses the second largest historical building complex in Spain, is a baroque and rococo square that incorporates a maze of courtyards. Moreover, it is the cigarette factory where Carmen, the protagonist of Bizet's opera of the same name, was said to have worked. The factory dates to the eighteenth century, but the university relocated there only a few decades ago.

Since 1940, the population of Seville has grown dramatically. From 281,000 at the beginning of the decade, it had risen to over 700,000 by 1990. When Seville-born Felipe Gonzalez was elected president of Spain in 1982, the ruling socialist party began to favor projects for the improvement of the underdeveloped south of the country. One of the major projects was the Expo '92 World Fair, which was held in Seville; the city's economy benefited from the spending of the 43 million visitors to the fair.

Further Reading: The university is mentioned briefly in a guidebook about Seville by Robert S. Kane, *Spain at Its Best* (Lincolnwood, Illinois: Passport, 1986), and in Dorothy Loder's *The Land and People of Spain* (Philadelphia: Lippincott, 1972).

—Cindy Mertz

UNIVERSITY OF SIENA

(Siena, Italy)

Location:	In central Tuscany, about 30 miles south of Florence.
Description:	A state institution enrolling approximately 14,000 students in undergraduate, graduate, and professional schools.
Information:	University of Siena Via Banchi di Sotto, 55 53100 Siena Italy 0577-298000

A school in Siena, supported by ■ tax levied on landlords who rented rooms to foreign students, was first mentioned in ■ town document from 1240, but there is subsequent testimony that ■ school of Roman law was established in Siena as early as the eleventh century. Schools of grammar and medicine also existed, all serving as forerunners to the university. In the first half of the thirteenth century, ■ Bolognese teacher wrote movingly of a city-financed school of grammar and rhetoric in Siena: "This distant land is crowned Siena. I have been there at the feet of its philosophy, I have heard its teaching, I have drunk its milk and not without labor and expenses have I found the flower of precious knowledge." Accounts such as this were critical to the Tuscan school, which owed its existence to students migrating from other northern Italian universities in search of alternative educational sites.

The university at Siena was recognized by Holy Roman Emperor Frederick II in 1248 and Pope Innocent IV in 1252. The pope's approval exempted students and faculty from taxes and recognized them as members of an institution governed by common law. In 1275, the emperor and the General Council of Siena urged the city to help finance the university; however, the school often found itself without sufficient resources and for some time lacked ■ permanent headquarters. Under these circumstances, classes were conducted in a rented church or in the teachers' own houses. Despite these difficulties, the university played an important role in maintaining the public health of the city. Therefore, after 1250, the city's municipal council made paying the salary of the school's medical teacher its top priority. In the early fourteenth century, city elders began paying the salaries of teachers according to fame; a legal act also set standards of behavior for teachers, requiring, among other things, that they stay in the city and teach "faithfully." If a teacher failed to

do so, his caricature would be drawn on the walls of the town, making him the object of public scorn.

During this period the university was associated with two notorious criminal incidents. The first involved Benincasa d'Arezzo, a well-known law professor at the university who later, as a judge in Rome, was murdered by Ghino di Tacco; the episode was apparently so graphic that Dante mentioned it in canto six of *Purgatory*. Then, in 1321, a student in Bologna was sentenced to death after being found guilty of kidnapping a girl, prompting students there to flock to Siena in protest; Sienese authorities responded by financing their reception and granting them standard student privileges. Though Bolognese officials were quick to try to lure the students back, the incident helped enhance the reputation of its Sienese rival.

In spite of competition from schools at Florence and Perugia, the university enrolled ■ large number of foreign students, particularly from Germany, Spain, Portugal, and Burgundy. The reputation of the school depended heavily on the renown of its teachers, and among those attracted to the school were canon jurist Federico Petrucci, civil jurist Giovanni Pagliaresi, and the poet and jurist Cino da Pistoia. A concerted effort was to be made to further improve the university's prestige. In 1348, the governors determined to spend whatever sum was necessary to persuade the pope to confer *studium generale* status on the university. Though they failed, the city's concistory, or ruling magistracy, also had been working to secure legal recognition for the university. In this they were successful. In 1357, Emperor Charles IV made the Sienese school an official university of the Holy Roman Empire, allowing it to confer academic degrees.

In 1392 the Bishop of Siena suggested the foundation of a *Casa della Sapienza*, or residential college, to maintain and preserve the school; due to the depressed economic state of the town, however, the project languished. In the early fifteenth century the idea again surfaced, and this time, with the considerable help of Pope Gregory XII, the plan was implemented. The pope approved the refurbishing of several rooms of an old charity hospital known as Mercy House, and decreed that the building would host 30 poor students from Siena. When the first students were admitted, however, none were from Siena and all had to pay 50 florins a year.

As time went on, the official functions of the *Sapienza* changed. Funding for the university was suspended in 1411 due to recurrences of the plague, which had first reached the city in 1348 and eventually wiped out half its population. Funding was also cut due to the influence of the rector of the local hospital, who considered the paying



University of Siena

of teachers' salaries an inappropriate use of public monies. Local officials now expected the *Sapienza* to provide the university with administrative and financial support, and also to supply the state with intellectuals capable of handling transactions with foreign powers.

The *Sapienza* quickly became the most important division of the Sienese school; its patrimony included shops and houses in town and an estate with more than a 100 farmhouses on it. Being admitted was a privilege, one that often depended on the recommendations of emperors, popes, or cardinals, as the school began to evaluate candidates on the political benefit to be gained. In 1472, the *Sapienza* helped to establish a new bank in Siena with a deposit of 300 gold florins; in the following year, government officials ruled that the college should assume the responsibility of building two houses every year, further increasing its role in maintaining Siena's economic well-being. The influence of the *Sapienza* is commemorated today in the university's seal, which pictures an *M* (for the original Mercy House) in a cross held by Saint Catherine of Alexandria.

The first half of the fifteenth century was a golden age for the university. A center of the new humanism, Siena attracted some of the world's greatest teachers. Among them were Antonio Panormita and Francesco Filelfo, who was paid a salary of 350 gold florins a year, the highest figure the university had ever paid. Also teaching at Siena was Marrasio, the author of *Angelinum*; Aeneas Silvius, the future Pope Pius II, who wrote *Cinthia*; and Antonio Beccadelli, who wrote a collection of epigrams titled *Hermaphrodytus*. From 1396, Buccio da Spoleto lectured on Dante and gave public talks on *The Divine Comedy* from San Vigilio on major feast days. The activities of the university led to the introduction of the printing press in Siena. Henry of Cologne, a German printer, began such activity in 1484 by publishing a law text by Paolo di Castro; the books later printed in the town were primarily meant for the school's roughly 600 students.

The Observant Franciscan San Bernardino was a great champion of the university during this period. Once a student at Siena, he left the university with 12 classmates to devote himself to the care of the sick during a plague outbreak. Later in his life he often returned to the city to lecture, and always urged the Sienese to support their university, warning them that without the education it could provide, no Christian community was possible.

Students at Siena were required to enroll in long courses of study: seven years for degrees in arts, medicine, or philosophy, and five years for degrees in civil or canon law. Meanwhile, the behavior and performance of teachers was still closely monitored. During the academic year, which ran between October and June, teachers were required to have at least five students for their classes; otherwise, they were fined and forced to lead discussions in the public square.

Interest in such rules diminished over the years, as the school was forced to deal with more serious matters, crises created by fierce competition with the University of Pisa, and by a period of political instability that brought the region under Spanish dominance.

Siena's status as an independent republic was now threatened by Emperor Charles V, who had been appealed to for protection against Pope Clement VII in 1526. Between 1530 and 1540 these political disruptions took a serious toll on the university. Many writers and scholars went into exile and the school was left to fend for itself with few teachers and a restless student body. The university became host to so many Spanish and Portuguese students that the other students staged a revolt in 1541. The emperor waged war on the city in 1552, with aid of the duke of Florence, Cosimo de' Medici. Siena surrendered in 1555, and two years later it was ceded to Cosimo, who was made grand duke of Tuscany in 1569. Meanwhile, the school continued its decline, becoming a small, civic institution.

The university began to expand again under governor Francesco de' Medici, who in 1569 created a committee to find new resources for the school. Francesco was made grand duke of Tuscany in 1574; at this time he approved articles of association for the many German students in Siena, despite their being implicated in charges of "Lutheranism" by the Inquisition. His successor, Ferdinand de' Medici, introduced faculty reforms at the university, dividing teachers into groups (doctors, jurists, artists, philosophers, and theologians) based on their disciplines. He also instituted the use of competitive examinations for teachers, to avoid political nominations.

In 1591 new legal powers were given to the rector, or student leader, of the university. Siena followed the model established in Bologna of a student-dominated institution. Its rector was an important figure in the life of the town; ideally a foreign student, the rector was chosen by student representatives and prominent citizens. The status of this position was reflected in the entertainments that marked an election: a month-long schedule of celebratory dances, masked balls, and plays. The status of the rector is well illustrated by the accomplishments of German rector Giorgio Fuccaro (1593), who enacted new laws about instruction methods and formally requested an end to protectionism that favored the rival University of Pisa.

Changes at the university during the seventeenth century diminished the influence of the rector. Competitive examinations were abolished and new governors were put in place. The university was now under the control of aristocrats who were faithful to the grand duke. Among the members of this oligarchy was the renowned teacher Pirro Maria Gabrielli, who founded the scientific *Accademia dei Fisiocritici* in 1691 to compete with Florence's *Accademia del Cimento*.

Siena's medical school, a cornerstone of academic life at the university, was notable in the eighteenth century for

its faculty, among them Paolo Mascagni, who wrote the famous *Grande Anatomia del Corpo Umano* (Anatomy of the Human Body). This work contained life-size anatomy tables that students still considered valuable a century later. However, the university's prosperity was destroyed by the French invasion of Tuscany in 1808, when the school was abolished and its dean pressed into service as the commissary of a new French medical school. Ferdinand III would eventually revive the university and transfer its legal, medical, physical, and theological colleges from the *Casa della Sapienza* to an old abbey near the church of San Vigilio.

Political upheaval, however, continued to affect the school's operations. After 1832, when the first *Risorgimento* (or national unification) uprisings took place, many Sienese students joined in the Young Italy movement in opposition to the grand duke. In July 1847, Ludovico Petronici, a medical student and known liberal, was killed by the police. The incident brought the tension between the authorities and students to a new high; a year later, 55 students and 4 teachers from Siena joined the Savoia army in the revolutionary battles of Curtatone and Montanara.

In 1851, Leopold II split the university in two: his decree kept the faculties of law and theology in Siena, and moved the colleges of medicine, philology and philosophy, mathematics, and natural science to Pisa. The provisional government that replaced Leopold II reorganized these two universities eight years later, but the changes tended to favor Pisa, especially in the humanities. After the plebescite to unify Italy, the new education minister, Terenzio Mamaini, suspended three teachers on the Siena faculty of theology for being reactionary; the archbishop promptly responded by resigning as administrative head of the university, which led to the faculty being abolished.

In 1862, however, with the passing of the Matteucci Law, the university was nationalized and, in 1875, an organization of citizens formed to assist the university in its development. The creation of the schools of pharmacy (1865) and obstetrics (1870) increased the medical school's reputation, which was also benefiting from the

services of the Hospital Santa Maria della Scala—later to become a university hospital. Developments in the law college included a law club that was founded in 1879 and, five years later, the introduction of the periodical *Studi Senesi*, which provided a forum for the research of law teachers and students.

Despite such progress, a proposal to abolish the university was presented in 1892 by minister Ferdinando Martini. This act incited a general strike by shopkeepers, and a protest committee was quickly formed representing every institution and group in town, including the seminary and the masonic lodge. Within a year, Martini's proposal had failed and expansion of the university continued; a new biology department was funded and built by the Monte dei Paschi. Later the work of the University Committee, the local hospital, the *Accademia dei Fisiocritici*, and other groups would support the university following the Gentile Law of 1923, which required small universities such as Siena to develop their own funding. In the years between World War I and World War II, the university proceeded to establish a faculty of political science.

One of Italy's most intact medieval towns, Siena has maintained the ancient beauty of its university. Today many of its departments are housed in centuries-old buildings. The arts and humanities faculties, for instance, are situated in the historical center of Siena, with one of the buildings linked by ancient passageway to the fifteenth-century Palazzo San Galgano. The medieval Servi Convent houses the departments of history, archeology, and art history, as well as various workshops.

Further Reading: Judith Hook's *Siena: A City and Its History* (London: Hamish Hamilton, 1979) provides many details of the early life of the university. Willis Rudy's *The Universities of Europe, 1100–1914: A History* (Toronto: Associated University Presses, 1984) discusses Siena in the context of other institutions.

—Melanie Wilson

UNIVERSITY OF SOUTHERN CALIFORNIA

(Los Angeles, California, U.S.A.)

Location:	Approximately three miles south of the Los Angeles Civic Center.
Description:	A private university enrolling approximately 28,000 students in undergraduate, graduate, and professional schools.
Information:	Alumni Relations Alumni House University of Southern California Los Angeles, CA 90089-5371 U.S.A. (213) 740-2300
Visiting:	The Alumni Association offers guided tours.

The University of Southern California (USC) was established on September 4, 1880, by members of the Methodist Episcopal Conference of Southern California on land donated by three civic leaders: Ozro William Childs, John Gately Downey, and Isaias Wolf Hellman. Ironically, these three men were neither Methodists nor educators, but they were indicative of the diversity which was to characterize the university's future development. Childs was an Episcopalian and a nurseryman/horticulturist, Downey was a Catholic and a former state governor, and Hellman was a German-Jewish banker and philanthropist.

Another person instrumental in founding USC was Judge Robert Maclay Widney, who worked diligently for the university's development after he settled in Los Angeles in 1868 and opened a law practice there. Eleven years later—after he secured the land donation from Childs, Downey, and Hellman—he saw his dream of a university realized. Widney House, the university's first building, which was designated a California landmark in 1955, is named for him.

The land was originally transferred to the Methodists by the three men as an endowment fund. All income from each individual lot was to be used to support and maintain the university. The deed stipulated that the majority of the board of trustees be members of the Methodist Episcopalian Conference, although the institution was created as a nonsectarian university. Further, the institution was to be incorporated as the "University of Southern California."

The *Los Angeles Daily Commercial* reported that "the establishment of this institution marks an era in the progress of the people of the Pacific Coast. It has outrun the railway, and established itself before the connecting

link has been made between the Mississippi and the Southern California coast." The university's founders were aware of its significance to future generations, not only in southern California but throughout California and the west. As a result, they marked the laying of the cornerstone of the first building in 1880 by placing a series of documents that pertained to the new university inside that cornerstone. When a more permanent brick structure—usually referred to as Old College—was completed in 1887, the cornerstone was placed in it; there the documents remained until 1948 when Old College was torn down. One of the items chosen to be preserved for posterity was the formal invitation to the cornerstone ceremony that took place on September 4, 1880. The date was especially important in the history of Los Angeles because exactly 99 years before, on September 4, 1781, at the site of the present Los Angeles Civic Center, another group of pioneers had founded the City of Los Angeles.

In fact, when the university was established, Los Angeles was still considered a frontier town. There were no paved streets, no telephones, and no electric lights in the area. However, Los Angeles underwent a dramatic transformation after the 1876 completion of the Southern Pacific Railroad link from San Francisco. This important link with the transcontinental railroad increased trade and transportation and contributed to the city's prosperity and growth.

The philosophical position of the university's founders was inscribed in a stone placed at the northern entrance to the campus. They expressed their desire to create a university that was dedicated to:

the glory of God and the preservation of the Republic; an institution of Higher Learning dedicated to the search for and dissemination of the Truth; to freedom of thought and discussion; to intelligent unbiased analysis of the forces that have shaped the past and will mold the future; to the development of Manhood and Womanhood for Christian service and loyal citizenship.

The true vision of the university lies in its founders' desire that it be a great university, not just a small college or a religious college, but a major research university offering a solid education in the liberal arts. The university was founded on the belief that "a great university could transform Southern California into a commercial and cultural mecca."

The University of Southern California's motto, "Palman qui meruit ferat" (Let whoever earns the palm bear



University of Southern California

it), exemplifies the university's emphasis on merit. Accordingly, the first class, which consisted of five men and two women, encountered a challenging array of courses such as Latin, English composition, physiology, integral calculus, and civil engineering. Two courses of study in the College Department, the classical and scientific, led to either ■ bachelor of arts or bachelor of science degree. As early as 1885, the university announced that merit would be the sole criterion for admission, asserting that "no student would be denied admission because of race, color, religion, or sex."

Three schools established within 20 years brought USC to the forefront in teaching and research related to medicine. Founded in 1885, the USC School of Medicine is now ranked among the top 20 medical schools in the United States in terms of federal research funding; it has developed into a major center for cancer research and care, gene therapy, neuroscience, and transplantation medicine. The School of Dentistry, founded in 1897, ranks among the top ten schools nationally in funding for dental research. The last of the three, the School of Pharmacy, founded in 1905, is the only school of pharmacy in southern California and one of only three in the entire state. It was the first school to offer a doctor of pharmacy as its sole degree. About half of the practicing pharmacists in southern California are graduates of the school.

During USC's early years the Bovard family of Alpha, Indiana, made major contributions to the progress and development of the university. Nine of the 12 Bovard children became Methodist ministers, and all were interested in education. The first president of USC was Marion P. Bovard, for whom the Bovard Administration Building is named. He was appointed to the office in 1880, after being in charge of the Fort Street Methodist Church for two years. His brother, George F. Bovard, served as the university's president from 1903 to 1921, and another brother, Freeman D. Bovard, became vice-president of the university.

During the presidencies at the turn of the century, the university struggled to keep up with the demands it faced from the rapidly expanding communities of southern California. Los Angeles's population had grown from 11,000 in 1880 to 319,000 in 1910. During George Bovard's 18-year administration, student enrollment increased from 329 students to 4,600 students. In addition, the young university found itself struggling without major contributors or endowment funds. Thus, it had to rely on its own faculty, deans, presidents, and trustees for its growth.

This situation began to change, however, during the 1920s. President Rufus von KleinSmid, who was president for ■ quarter of a century, is often hailed as the man who built USC into southern California's only major private university. Affectionately known as "Dr. Von," von KleinSmid, who served for the 25 years between 1921 and 1946, is credited with many significant pioneering ventures. After only his first decade in office he had

brought the university to full national accreditation, established a graduate school, and begun working toward making USC a large, nondenominational university. In 1928 he was responsible for making USC an independent, nonsectarian institution. Until that year the university had been governed by the Southern California Methodist Conference, which elected the university's trustees. Although the conference controlled USC, it did not support it financially. After several failed fundraising drives, von KleinSmid proposed a resolution to amend the articles of incorporation; as ■ result, control of USC passed to ■ self-perpetuating board of trustees, ending the university's formal ties to the Methodist Church.

One of the most memorable additions to the university during the von KleinSmid years was the Doheny Memorial Library, completed in 1930. At the time, the university had over 15,000 students and 20 colleges and schools but no separate library building. The library is named for Edward L. Doheny, who was then one of the most important financial figures in the United States. By investigating the crude tar or *brea* found near Westlake Park, he discovered oil; he then donated a portion of his oil fortune to USC for the construction of its library. (Doheny was subsequently indicted in the Teapot Dome Scandal, which involved the illegal leasing of oil fields, but he was acquitted.) The Doheny Library provided more than just a needed physical facility. It gave the university a focal point for its expansion when the surrounding Alumni Memorial Park was created; there students still gather and there commencement exercises are held.

The von KleinSmid era also saw the establishment of the Department of Cinematography. Founded in 1929 by famed motion picture producer and director Cecil B. DeMille, with the cooperation of the Academy of Motion Picture Arts and Sciences, the department's curriculum was organized to cover all aspects of the movie industry. DeMille continued his support of the department throughout his Hollywood career. The department was the first in the nation to offer a bachelor of arts degree in film. Its first course, "Introduction to Photoplay," featured such faculty members as producers D.W. Griffith and Darryl Zanuck, and actor Douglas Fairbanks Sr. Even today, this school is usually regarded as one of the leading film schools in the United States. The regular faculty has always been augmented by lecturers and instructors who are distinguished in both theatrical and nontheatrical film. Today the program is known as the School of Cinema-Television. The list of USC students and alumni who have achieved fame in the motion picture and television industries could make up ■ large portion of a "Hollywood Hall of Fame." Among its former students are Robert Zemeckis (director of the Academy Award winner *Forrest Gump*), George Lucas (director of the *Star Wars* films), Ron Howard (director of *Apollo 13*), and James Ivory (of the Merchant-Ivory partnership that has produced such films as *Howard's End*).

Another school for the performing arts, the School of Theater, has produced well-known stage and screen actors, directors, and technicians who have received a wide range of honors including Tony, Obie, and Emmy awards. A third school in the area of the arts predates the other two. The School of Music, founded in 1884, is probably the principal music school west of the Mississippi. Its alumni include jazz musician Lionel Hampton, conductor Michael Tilson Thomas, trumpet virtuoso Herb Alpert, and opera star Marilyn Horne.

In addition to its renown in film, USC is also considered one of the premiere private research universities in the world. Its long tradition of active and research-oriented professors was recognized when USC Professor George A. Olah received the 1994 Nobel Prize in chemistry. Two alumni made history in the NASA space program. The first man to walk on the moon (in July 1969), Neil Armstrong, spent five years in graduate study in USC's aerospace engineering program. The fourth man to walk on the moon, Navy Lieutenant Commander Alan L. Bean, completed intensive graduate courses at USC's Institute of Aerospace Safety and Management.

Cognizant of its location in Los Angeles, a city with a significant minority population, USC has provided a variety of programs designed to improve the urban environment and the university's relationship with the surrounding city. The Center for Urban Affairs opened in 1969, offering both undergraduate and graduate degrees in urban studies. A year later the university established an undergraduate program concentrating on the biological aspects of such urban problems as pollution, community health, drug abuse, and decreasing world food supplies. The program was the first of its kind in the nation offered to students who were not science majors. Another creative program found a group of Spanish-speaking fifth graders serving as "guest lecturers" in classes in conversational Spanish, while a group of USC students conducted a bilin-

gual course in first aid at a Los Angeles school. On another level, in 1985 the USC library received the H.F. Boeckmann II Latin American Collection, valued at approximately \$1.7 million. It contains important materials published in Latin America, primarily from Mexico, Brazil, Central America, and the West Indies.

In 1969, USC was elected to membership in the Association of American Universities (AAU), which was founded in 1900 as an organization of universities in the United States and Canada considered preeminent in the fields of graduate and professional study and research. Today it is made up of 58 leading public and private universities.

The University of Southern California is also internationally famous for its athletic program. Since 1904, a total of 272 USC athletes have participated in the Olympics, more than any other university in the world. Olympians from USC have won 87 gold, 53 silver, and 46 bronze medals. A USC athlete has won a gold medal in every summer Olympiad in which one has competed since 1912, making USC the only university in the world with this distinction. The "Trojans," USC's nickname, was coined by journalist Owen Bird in 1912 to honor the athletic teams' spirit.

Further Reading: Manuel P. Servin's *Southern California and Its University: A History of USC 1880–1964* (Los Angeles: Ward Ritchie Press, 1969) is a detailed history of the development of USC through 1964. A less detailed but updated account is the USC publication *University of Southern California: Glimpses of History 1880–1995* (USC History Project, April, 1995). *The Pocket Profile 1995*, published by the University Public Relations Administration, provides statistical and related information.

—Judi Gerber

UNIVERSITY OF SYDNEY

(Sydney, New South Wales, Australia)

Location: Four campuses near the main business area of Sydney. The Conservatorium Campus and the St. James (law school) campus are in downtown Sydney; Cumberland Campus is at Lidcombe; Rozelle Campus (Sydney College of the Arts) at Rozelle; Surrey Hills (dentistry) campus at Surrey Hills, Orange Agricultural College is 242 kilometers west of Sydney at Orange. The faculty of agriculture also has outlying teaching areas at Camden and Narrabri. Astrophysics has various telescopes at sites outside of Sydney.

Description: A state university (with eight residential colleges) enrolling 30,000 students with 2,514 academic staff, 5,415 total staff.

There are faculties of agriculture, architecture, arts, dentistry, economics, education, engineering, health services, law, medicine, nursing, science, veterinary science, board of studies in music, and social work, College of the Arts, Conservatorium in Music, Agricultural College at Orange and numerous research institutes and Centres of Excellence as well as continuing education.

Information: The Registrar
University of Sydney
New South Wales 2006
Australia
(02) 9351-2222

Visiting: Museums and galleries are open at set hours. Guided tours are mainly run by the Chancellor's Committee, telephone (61) 02-9351-3927.

William Charles Wentworth's proposal in 1849 for the establishment of a university in New South Wales was met with indifference or hostility by Australians. Although the transportation of convicts had ceased, New South Wales society was still profoundly affected by the mores of a convict-based system with, on the one hand, profound suspicion of the rulers and the wealthy and, on the other, an ingrained expectation that the government should provide. This view was reinforced by religious antagonism between the Catholic Church, which was powerful among those of Irish descent, the Church of England, and the more powerful Protestant sects. Conflict over control of a university, over access, purpose, direction, and funding, was inevitable. Autonomy was a

concept reserved for rhetoric. The prospect of a private university was remote. Private resources were inadequate and philanthropic impulses poorly developed. Any university with minimally acceptable standards would necessarily be founded by public act and subsidized by public money.

Wentworth, the lawyer son of a convict woman and an Irish ship's surgeon twice acquitted of highway robbery, embodied the colonial myth of Australian identity. His life-long commitment to colonial self-government underlay his belief that a university was essential—a belief not widely shared. The colony was still small—under 200,000 people, about a quarter resident in Sydney—and the newly introduced national education system as yet had produced few candidates capable of university entrance. Those who could afford professional training for their children sent them to Britain. While a local institution might be promoted as offering openings for colonial talent, in practice those able to avail themselves of its services would be a small ruling group, subsidised by scarce government resources.

The yardstick against which the proposal was measured was profoundly utilitarian; training was more acceptable than education. This underlay the first proposal which was for a graduate professional university covering medicine, engineering, and commercial pursuits with liberal arts to be provided by separate, affiliated colleges. Those who contributed to the debate were numerous. No single figure either then or subsequently ever dominated the shaping of the institution. The final proposal was formed from conflicting views and compromises. These have been the elements which shaped the institution from its origins to the present day. Utility, the problems of state funding, and state control through appointments to the governing body and the power to alter the governing act, conformity to international expectations, and the university's accessibility were continuing themes.

All agreed the university should be like those in England but disagreed on the particular model: either London where the university's role was only to examine and the colleges to teach, or a university which both taught and examined. Even more contentious was the issue of whether the school should be secular and what part the churches should play. Wentworth wished to exclude the clergy from teaching. While religious colleges might affiliate, the university should be a source from which "all may drink be they Christian, Mohamadan, Jew or Heathen."

By government act on October 1, 1850 the university was established—secular and nonsectarian with no religious tests for entry, open to all academically qualified



University of Sydney

subjects of the Queen resident in NSW without any distinction whatsoever. It was given the power to confer after examination the degrees of B.A., M.A., B.Laws and D.Laws, B.Med and D.Med, and to examine for medical degrees in medicine, surgery, midwifery, and pharmacy. Denominational colleges might be founded but had to be privately funded. A royal charter would be sought, but the inauguration was not delayed until it could be obtained. Only one-quarter of the governing body, the senate, could be clergy. The principal officer, the provost, was to be elected annually.

The government of NSW provided an endowment of £5,000 for building, stipends, scholarships and prizes, a library, and other necessary expenses. Additional resources had to be raised by fees. This factor immediately limited the university's scope as few candidates presented themselves. Only three foundations professors—classics, mathematics, and science—could be appointed. They were expected to supplement their stipend from class fees and extramural teaching and had tenure during good behaviour.

The vision for this public university, which was one of the most isolated in the world (an average of three months behind news from Europe), was perfectly summarised in the university motto "*Sidere Mens eadem mutato*." The only concession to the southern hemisphere was in adopting the calendar year for academic purposes which better suited the southern seasons. Conservative, traditional adherence to concepts, standards, and objectives developed elsewhere became dominant characteristics of the university, at times its strength and at others its weakness.

The first university appointments were remarkably well judged. The foundation professors firmly asserted university autonomy and British orthodoxy against a variety of local pressures and critically reshaped the intended structure to this end. Woolley, the first principal, with the full support of the second provost, Sir Charles Nicholson, promoted liberal arts as the core, indeed, as "the University properly so called" to which the special schools devoted to the professions were complementary. Liberal arts were directed to "the learner as an end in and of himself, his perfection as a man simply being the object of his education." The purpose was fundamentally moral based on "fixed and eternal principles." The university was to train gentlemen, to discipline the mind, and develop the power of independent reasoning, and the best way of providing such mental training was through maths and classics. It was to prepare statesmen and leaders for their tasks. The professional schools, on the other hand, had an end beyond the learner, in service to the community. Woolley also insisted that the teaching provided by the university was a necessary requirement for sitting university examinations, preventing the colleges from simply presenting candidates for examinations. University students did not have to belong to a college, and the colleges which appeared, although internally autonomous, had little influence on the university curriculum.

University instruction began at the downtown site which now houses Sydney grammar school, but in 1852 Grose farm, which was then some way out of the town of Sydney, was confirmed as the permanent site despite its inaccessibility, which made part-time or evening attendance inconvenient. The senate was determined to build an imposing public structure. The colonial architect, Edmund Blackett, designed a Gothic Revival structure to be built in stone; it was not opened until July 18, 1859, when only the front facade was completed. The opulence of the vision ran the university into debt, but, despite some criticism, it was accepted as reasonable in the heady post-gold-rush days, when icons of aspiring nationality were seen as desirable.

The university was still struggling to establish the importance of its role in the local community. It was under attack for its traditional and irrelevant undergraduate teaching which was restricted to Greek, Latin, mathematics, natural philosophy, chemistry, and experimental physics. Postgraduate teaching was virtually nonexistent. The masters program was largely nominal, and, although law and medicine were formally established in 1855, they were little more than examining boards. Colonial society was not impressed with the virtues of Greek and Latin. Practical relevance, not the alleged development of thought, was sought, and most were disinclined to pay substantial fees.

Only children of the wealthy could afford university despite the availability of 12 scholarships which should at least have covered the fees. Few students therefore enrolled, and fewer graduated. Between 1852 and 1860 only 109 matriculated and 33 graduated with perhaps 33 attending in any one year. Ignoring public indignation, in the name of maintaining standards, the professors sometimes failed up to half the candidates and publicly rebuked the students for their poor performance. A corporate university life, which might have attracted students, was slow to develop. Students came only to lectures and then dispersed.

As part of their effort to strengthen and integrate the university into NSW society, the foundation professors, John Woolley, Moris Pell, and John Smith, went outside the university and made a significant contribution to the education of the whole community from primary school to adult instruction both directly by extramural and evening classes, and indirectly. The matriculation examinations provided a state-wide standard. Each in his own way also served the practical needs of the economy, Pell as an actuary and an expert on rivers and railways, and Smith as a practical chemist and photographer.

Despite this, public support remained problematic. A facility paid for by all should be, but evidently was not, available to all. The requirement of attendance at lectures not only excluded non-Sydney residents but those who might through private study achieve the appropriate knowledge. Considerable expenditure, narrowly viewed,

seemed to have produced insignificant measurable results. Social radicals felt that the money could have been better spent on schooling for the poor. A parliamentary enquiry in 1860 criticised building costs and the relationship with the affiliated colleges, which was seen as violating the principles of secular education. Critics compared the university's requirements unfavourably to those of the University of Melbourne.

Public indifference, state parsimony, and a narrow academic vision of the university curriculum combined to ensure that numbers remained low throughout the 1860s and 1870s, and the problem of persuading students to attend the university remained acute. In 1865 there were 46 students; in 1881, 51 matriculants and 14 graduates. Many courses were dropped for lack of student interest. Sciences were grudgingly accepted as part of the arts curriculum largely in deference to public opinion. Badham, the classics professor thought them "ornaments of the memory which may be required at any time of life." A separate faculty of science, however, required an additional endowment that the state refused. Slowly, nevertheless, a sense of internal community was developing, symbolised by the foundation of the University Union in 1874 and the traditions of debating and the annual Commemoration Day.

Transforming the university from a finishing school for gentlemen to a multifunctional institution that trained in specific professional skills was slow, and even by 1914 it was incomplete. The 1880s were a period of growth for the university, reflecting the general population increase, economic prosperity, and the results of an improving school system. In 1881 after a decade of stonewalling, women were admitted at the instigation of the chancellor William Manning, and they immediately took advantage of the change to enter arts, science, and medicine. They were slower to enter law since they could not practice before 1918, but by 1918 there were 641 women undergraduates—one-third of the total undergraduate population.

New interest in university development was stimulated by professors such as Liversidge and Charles Badham, who traveled the country to promote bursaries and easier access to university study. Badham's theme was that "The university was wherever the Professor might be and University hours were whenever the mass of students could attend." The university curriculum was changing. Evening classes were introduced in 1884 and additional lecturers were appointed to conduct them. Numbers rose steeply—284 in arts in 1890 with a quarter of all students studying at night. Extension lectures were also formally introduced in 1880, helped by Liversidge's report on the movement in England. This assisted the working class and elementary school teachers who wanted to improve their qualifications, and attempts were made to extend them to towns outside the capital.

The Challis bequest in 1881 and Thomas Fisher's bequest for the library together with a further £5,000

from the government enabled long-shelved plans for professional development to be implemented. A medical school and an engineering school were finally established as well as chairs in subjects such as modern history. Unfortunately this burst of private philanthropy did not mark a turning point in endowments, which remained rare and unreliable. It precipitated, however, a major shift to the professional faculties. The young foundation professor of medicine, Anderson Stuart, believed that technical learning trained the mind just as well as arts or science, and despite Manning's support for the arts as "the very essence of University education and the chief source of culture," his demands were largely met, which upset the university's finances and squeezed the other faculties. The medical school soon became so large, attracting more students than the arts faculty, that its needs took precedence over developments elsewhere, causing bitter internal division.

In the depression of the 1890s, however, the government once again cut the university's public revenues, requiring it to rely more on its own resources while putting impediments in the way of the university's ability to increase charges. The press again urged that it was still not catering to poor students but expected support for the wealthy. Although its graduates came to the university's defense and attempted to influence government and public opinion, the support was more moral than financial. Only engineering benefited from a substantial gift from the manufacturing family of Peter Nicol Russell.

As the university gradually recovered, the shift toward utilitarian subjects increased. The typical student background was changing. Middle-class and a few skilled working-class parents demanded the useful and the vocational. Science and scientific research were justified as essential to the nation's industrial and commercial prosperity. Close links with the professions in law and medicine were promoted. Professors were appointed from practicing professionals; quality in teaching did not necessarily follow. Student expectations were growing and criticism of lecturers was commonplace.

Internal dissatisfaction with the university's management structure was also developing. The senate was dominated by government appointees. Professors and undergraduates alike were aggrieved at their exclusion from senate decision making and its habit of ignoring their submissions. Disagreements arose over issues of vital importance to academic autonomy, such as freedom of speech, when the modern history professor, George Arnold Wood adopted the unpopular position of opposing the Boer War.

Education under the federation remained a state responsibility, and further professional and practical disciplines were introduced: dentistry (1900), agriculture (1908), and veterinary science (1908). They were followed by economics, commerce, and education, although only economics attracted a large number of students.

A major management restructuring to suit the needs of a much expanded university was overdue but did not occur until 1924. The result was a permanent full-time vice-chancellor following the English pattern, changes to the senate, and the creation of six new faculties, bringing the number to ten. It was not increased for another 50 years.

The staff was not satisfied. The professorial board was responsible for academic advice, but the senate's view of their authority in such matters conflicted with the board's. The senate interfered in new appointments, notoriously refusing to appoint Gordon Childe and deciding to sack the poet Christopher Brennan for marital indiscretions and drink. The dispute in 1943 over the appointment of Julius Stone to a law chair was both bitter and public. Senate interference in the selection process and attempts to block the appointment met an uncompromising assertion of professional board rights and conflict over the "rights" of the legal profession to be consulted. Racist (Stone was Jewish) and "nationalistic" (an Australian was hoped for) issues came into play. Professors felt they had particular rights and responsibilities, but a growing issue was that of the nonprofessorial staff who were aggrieved by their continuing lack of voice. By 1940 nonprofessorial academics constituted 75 percent of the total staff and their career prospects were diminishing.

Sharp growth in student numbers after 1919 meant for the first time courses were overcrowded, and proposals to cap numbers emerged. The legal status of matriculation made the university's ability to refuse access to any faculty to a matriculated student problematic, however. High enrollments in the expensive faculties aggravated financial difficulties. By 1924 there were 809 students in arts and science and 1,696 in professional programmes. Increased funding deferred the issue of access for a time. A generous bequest from Sir Samuel McCaughey in 1919 provided an income of about £15,000, which was used for salaries; the government also increased its grant and made a special allowance for new building. Although many members of the state parliament were by now Sydney graduates, this did not always produce a government sympathetic to university difficulties.

Funds were tight and attempts to raise money externally had only a limited success. The 75th anniversary appeal produced promises of only £350,000, of which £250,000 was a single gift from George Henry Bosch directed to medical education. With the depression, the financial problems got worse. A public enquiry into possible mismanagement instead recognised that on the basis of the numbers of students on scholarships and bursaries, the endowment was inadequate and the chairs established at government request not properly funded, although by comparison with Melbourne, the university was overstaffed. The proposed solution was to reduce the bursaries, and a reduction in government funding saw salaries cut by a "voluntary" ten percent and, later, a further five percent cut.

The problem of maintaining a sense of community in an institution under pressure from reduced resources but increasing numbers stimulated new bodies. The Lecturer's Association was intended to make the ideal community a reality by providing a focus which would bring the subprofessorial staff together in communal activities that would serve both mind and body. To improve interaction between different faculties the association sought to get one or another faculty to give talks on what they were doing. Common social activities were promoted.

Students suffered from similar problems. Growing numbers did not improve student participation in activities outside the classroom. College residents, the most active, were a very small percentage of all students—under 500 in all. Only unpopular senate decisions, such as a crackdown on the Commencement Day procession or the proposal to raise money for services by a general levy on students, united undergraduates, who typically responded with an appeal to the state government to change the composition of the senate. As jobs became harder to find, graduates associations were formed, but most were a passing phenomenon.

Throughout the inter-war period, the university was struggling to maintain its standing as a reputable international institution in circumstances which were pushing the costs and direction of research beyond its resources. Its staff had always had problems keeping in touch with developments which were so far away, and these were exacerbated by the increasing speed of new discoveries and the need for teams of researchers. Study leave was increasingly essential and became universal. A variety of external sources, however, enabled some research to be maintained. Although the main university focus was undergraduate teaching, the staff laid stress on the symbiotic nature of teaching and research and fought for a division of time which would permit scholarship. In 1942 the Ph.D. was inaugurated, but postgraduates went overseas for training.

The quality of the teaching was high and frequently updated. Stephen Roberts, for example, introduced the first fourth-year honours course in Australia. Slow moves toward small group teaching, however, were put on indefinite hold by the war. Attempts to meet specific training needs were mainly frustrated. Radcliffe-Brown's diploma in anthropology to train cadets for service in Papua/New Guinea was perhaps the most successful. A diploma in journalism, introduced at the request of the Journalists Institute, dwindled and died. Too few students completed university courses in country centres to make them financially viable. In 1938, however, a college of the university was established at Armidale, the second campus in the state.

Community service remained an expected academic contribution. Broadcasting provided a new form of sharing expert knowledge, which improved the general image of the university with the public. The cultural cringe,

however, continued. Candidates for jobs from Britain always had the edge over local candidates.

In 1939 the university had 13,000 graduates, ■ student enrollment of 3,839, and 173 staff. The war effort persuaded the governments that university research was useful at least in science and science-related subjects, which was important for postwar university growth, but attempts to restrict “normal” scientific communication in the interest of “national security” even after the war caused renewed conflict with the academic community. Freedom of expression for academics was also tested when the professor of philosophy, John Anderson, attacked compulsory religious teaching and was censured in the NWS legislative assembly.

The university was still accessible only to the few. Students from state schools without scholarships were usually unable to attend even if they had matriculated. The need for army education, however, had led to the commonwealth government for the first time taking a part to supply its manpower need by financing students. This affected the social profile of students and the percentage from state schools. Quotas were imposed in medicine, dentistry, engineering, veterinary science, and agriculture. The growth of an intellectual community was noticeable.

Even so, in 1950 the public image of the university was still ambiguous and the rush of returned military to get ■ degree, which swamped classrooms (nearly 9,000 students), was not matched by state grants, although the commonwealth government continued and eventually extended its assistance. At this time, a third of all Australian university students attended the University of Sydney, but Sydney in 1949 received the smallest grant per student of all universities in Australia. The university received about 4.4 percent of the annual cohort of students until 1960 when there was a marked and sudden rise. A new emphasis on postgraduate training after 1946, despite the initially slow growth in numbers, led to a shift in university priorities.

The appearance of new universities, especially NSW and technical colleges, affected Sydney's position. Growth was to be accommodated by increasing the number of institutions, not allowing one to grow to an unmanageable size. Roberts, the new VC who was a clever politician, helped develop a new image for Sydney as the premier institution with the greatest range of disciplines, postgraduates, and research. Sydney took the cream of the students and was the first institution to select for entry on merit. The 1950–52 centenary celebrations helped, although the centenary financial appeal was a failure. Faculties sought outside funding. Research foundations such as the nuclear research foundation established by Harry Messel were able to draw on public expectations of immediate returns from science.

After the 1957 Murray report, which confirmed commonwealth commitment to university education, there

was a rise in staff numbers, and new areas of study were developed. The percentage of Australian-born or trained staff was increasing, and Sydney was employing more and more of its own graduates. By 1966 student numbers had risen to 16,000 and many came from state schools and poorer backgrounds. There was also a sharp rise in postgraduate students assisted by commonwealth scholarships. In 1963 they comprised 3.7 percent of total enrollment, and the plan was for an increase to 9 percent by the end of the decade and 14 percent in the 1970s. Such a high percentage, however, required increased funding which was not forthcoming, and 1,000 postgraduates in 1981 still only comprised 5.8 percent of total enrollment. Coursework for graduates proved popular. Most were local students—government efforts to encourage students to move from their home fell on stony ground.

Changes in teaching practices followed worldwide changes. A tutorial system was one way of improving learning and attempting to reduce failure rates. Restructuring disciplines led to the rise of the department and decline of the God-professor. The result of demands for participation was a rise in internal disagreements. Disputes within departments spilt over in a number of cases into stoppages and fights and in the economics case a student strike. Student support and activism, especially after 1967, took the authorities by surprise. Adaptation to new social conditions and changing cultural norms followed slowly and often after government pressure to take in ■ wider range of students, especially aborigines and those of a non-English-speaking ethnic backgrounds.

Reliance on the government for funding research made restructuring difficult, but common facilities such as SIL-LIAC and the Electron Microscope Unit were achieved and the library reached 2 million books by 1975. Bequests by Edwin Cutberth Hall for archeology, John Power for fine arts, and community support for modern Greek and Hebrew helped but represented a tiny fraction of the total required. In 1973 the commonwealth government's assumption of all funding for tertiary study increased government control of the direction of new development and pressure to comply with new state and federal rules on equal employment, antidiscrimination, health, and safety. The university's technical autonomy was finally curbed by the need to negotiate for what a decade later became called a “profile” of activities.

The 1975 change of government saw curbs on university growth. The 1980s saw undergraduate numbers slowly rising as the university moved from elite training to the multiversity. New areas such as women's studies got underway through combined efforts of academic and general women staff. The end to elitism came with the 1988 amalgamations, when the old university, under pressure from Canberra, was joined by Cumberland College of Health Sciences, the Teachers College, the Conservatorium of Music, and the College of the Arts. The centralised 1924 structure, despite its many subsequent

modifications, was inadequate to cope with the sudden increase in size and in numbers of campuses; the consequent restructuring is still incomplete.

Further Reading: The official history in two massive volumes is *Australia's First: A History of the University of Sydney*, 2 volumes (Sydney: University of Sydney and Hale and

Iremonger, 1995). See also S.M. Jack, "The Cultural Transmission of Science and Technology to Australia 1788–1989," in *Under New Heavens*, edited by Neville Meaney (Port Melbourne: Heinemann, 1989).

—Sybil Jack

UNIVERSITY OF TEXAS SYSTEM (Texas, U.S.A)

Location: On more than 350 acres just north of the state capital and additional land acquired by gift and purchase, the main branch of the University of Texas System (UT System), the University of Texas at Austin, is located in the heart of beautiful Central Texas Hill Country. Additional parts of the main university campus include the J.J. Pickle Research Campus, a 476-acre tract eight miles north of the main campus that houses research organizations in engineering, science, and the social sciences; the Brackenridge tract, 445 acres bordering the Town Lake, where research is conducted in life sciences; and the Montopolis Research Center, 94 acres located in southeast Austin.

Description: The academic flagship of the UT System's 15 component institutions, the University of Texas at Austin, is a major, comprehensive research university with a broad mission of undergraduate and graduate education, research, and public service. With approximately 48,000 students in attendance, a full-time teaching staff of about 2,700, and about 15,000 staff members, the university's programs and professional schools generally rank among the top 20 programs and schools in the United States.

Information: Director of Information Resources
The University of Texas System
702 Colorado Street
CLB, Suite 5.104
Austin, TX 78701-3020
U.S.A.
(512) 499-4547

University of Texas at Arlington
P.O. Box 19088
Arlington, TX 76019
U.S.A.
(817) 273-2119

University of Texas at Brownsville–Texas
Southmost College
Office of News and Information
80 Fort Brown
Brownsville, TX 78520
U.S.A.
(956) 544-8231

University of Texas at Dallas
P.O. Box 830688
Richardson, TX 75083-0688
U.S.A.
(214) 690-2111

University of Texas at El Paso
500 W. University Avenue
El Paso, TX 79968-0512
U.S.A.
(915) 747-5896

Public Affairs
University of Texas–Houston
7000 Fannin Street
Houston, TX 77030
U.S.A.
(713) 500-3033

University of Texas–Pan American
1201 W. University Drive
Edinburgh, TX 78539-2999
U.S.A.
(512) 381-2011

University of Texas of the Permian Basin
4901 E. University Boulevard
Odessa, TX 79762-0001
U.S.A.
(915) 552-2020

University of Texas at San Antonio
6900 North Loop 1604 West
San Antonio, TX 78249
U.S.A.
(512) 891-4011

University of Texas at Tyler
Office of Admissions and Student Records
3900 University Boulevard
Tyler, TX 75799
U.S.A.
(903) 566-7202

Visiting:

The Visitor Center at the University of Texas at Austin provides information and assistance to visitors. Located in Sid Richardson Hall, adjacent to the Lyndon B. Johnson Library and Museum, it is open weekdays from 8 A.M. to 4:30 P.M. For information, telephone the Visitor Center at (512) 471-6498.

The Office of Admissions provides student-guided walking tours of the campus. Reservations are not required; weather permitting, tours leave from the General Information Desk on the ground floor of the Main Building at 11 A.M. and 2 P.M. on weekdays, and at 1 P.M. on Saturdays. Tours are not conducted during the last half of December, the first half of May, or on official holidays, but a self-guided tour brochure is always available.

For more information, or to schedule special tours, telephone the Office of Admissions at (512) 471-1711.

For visitor information for the other locations of the University of Texas, please contact those individual institutions (listed above).

Following its liberation from Mexico in 1836 and prior to its annexation by the United States in 1845, the independent Republic of Texas began pursuing the goal of education for its citizens. In 1839, under Texas president Mirabeau B. Lamar, the Congress of the Republic of Texas ordered that land be reserved for a university.

The same year another act of legislation allocated 50 leagues (231,400 acres) and funds for the endowment of two colleges or universities. Whether the funds had to be reallocated for frontier defense or there was disagreement as to the location or there was disagreement as to the location or future funding of the university, no further action was taken by either the Congress or the Texas legislature until 1858, when the legislature appropriated for the university the 231,400 acres of land granted in 1839; \$100,000 in U.S. bonds left over from the \$10 million paid to Texas as part of the Compromise of 1850; and one section of land out of every ten reserved to the state in grants made in aid to private agencies.

The Act of 1858 also created a body of ten administrators to control the university—the governor, the chief justice of the Texas Supreme Court, and eight others nominated by the governor. However, fate and history again conspired to delay the opening of the university; secession and the Civil War prevented the act from being carried out, and instead, most of the appropriated university funds were used for other state needs and not repaid until 1883. Meanwhile, the Constitution of 1866 demanded that the legislature establish an institution of higher learning as soon as possible, and so the Texas Agriculture and Mechanical College was created. As a result, the first state-supported educational institution to actually matriculate students was the Agricultural and Mechanical College of Texas, now Texas A&M University, which opened at College Station in 1876.

The long wait was making university supporters anxious. The Constitution of 1876 stipulated that the legislature, without further delay, establish, organize, and

maintain a university of the highest caliber, and that popular vote would determine the university's location. An article of the same constitution made agriculture and mining a branch of the university and ordered the legislature to establish and maintain a college or branch university for black students, although no tax was to be levied and no money appropriated out of the general revenue for such a school or for buildings of the University of Texas. This proscription effectively prevented the establishment of a separate branch of the university for blacks. The constitution went on to authorize the allocation of the original 231,400 acres granted the university in 1839, but it repealed the gift of alternate sections of land granted railroads, instead substituting a million acres in West Texas.

An act passed on March 30, 1881, created a governing board of eight regents (later changed to nine); established admission fees, coeducation, and nonsectarian teaching; and called for an election to name the location of the university. The governing board met for the first time on November 16, 1881, and elected Ashbel Smith president, Alexander P. Woodrige secretary. Then, on September 6, 1882, the citizens voted to make Austin the site of the main university and Galveston the site of the medical department. A small, 40-acre tract on College Hill was chosen for the main campus, and on November 17, 1882, in a ceremony officiated by Ashbel Smith, the cornerstone of the west wing of the first Main Building was laid. This first building, known to all as the Main Building, for many years, served all of the university's purposes, from housing administrative offices to classrooms. Although classes were still being held in the temporary capital as late as January 1884, the university finally opened its doors in the new building on September 15, 1883. Eight professors, four assistants, and one proctor served the needs of 221 male and female students during the university's first year. Forty-four years had passed since members of the new Republic of Texas had first set in motion plans for a university.

From its first year, Main University offered upper level degrees. Divisions in instruction were termed departments and subject divisions within departments were called schools. Main University opened with an academic department (with six schools) and a law department. More schools and departments were added until, by 1994, the university had eight colleges and seven schools offering a total of about 100 undergraduate degree programs and 170 graduate degree programs. The colleges and schools were the College of Liberal Arts (1883); the College of Natural Sciences (1883); the School of Law (1883); the College of Engineering (1894); the College of Education (1905); the Graduate School (1910); the College of Business Administration (1922); the College of Pharmacy (1893 at Galveston, moved to Austin in 1927); the College of Fine Arts (1938); the Graduate School of Library and Information Science (1950); the Graduate

School of Social Work (1950); the School of Architecture (1951); the College of Communication (1965); the Lyndon B. Johnson School of Public Affairs (1970); and the School of Nursing (1976). The Division of Continuing Education, originally the Division of Extension (1909), changed to its present name in 1977.

By 1967, the faculty had grown to 1,800 and included 9 of the state's 14 members of the National Academy of Sciences. During the 1960s, the university established nearly two dozen endowed and named academic positions, as well as temporary lectureships, to lure high-profile academics to their departments. Today, for example, the University of Texas at Austin has more than 1,000 privately funded endowed faculty positions.

Care was taken to ensure the future financial security of the university and its component institutions. In addition to gifts and grants to the university made by alumni, other patrons, and fundraising efforts, the end result of the numerous legislative acts concerning the university was the establishment of the Permanent University Fund, the Available University Fund, and biennial legislative appropriations. The Permanent Fund is an endowment consisting of the proceeds of the sale of the 231,400 acres deeded to the university in 1839, the million acres granted in the Constitution of 1876, and a second million acres granted the university by the legislature in 1883, together with proceeds of sales or leases of this land. The Permanent Fund cannot be spent, but instead, must be invested in particular types of bonds, the interest of which constitutes part of the Available Fund, along with student fees, and other university revenues. Use of these monies is fixed by the legislature in biennial appropriation bills.

At the outbreak of World War I enrollment at the university had risen to 2,254, and then to 4,001 the first year after the war ended. By 1938, enrollment had increased to 11,146; it dropped during World War II to 8,794, but rose to 15,118 in the year following the war. To meet the demands of the growing enrollment the university had to physically expand, both in terms of classrooms and housing structures, but it was increasingly clear that the 40-acre campus was no longer large enough to accommodate such expansion.

In 1921 the university's regents briefly considered moving the campus to a 500-acre site on the banks of the Colorado River donated by George W. Brackenridge 11 years earlier in 1910, but the board's vote to move the campus was met by bitter opposition. In response, the state legislature voted to purchase additional land adjacent to the original 40 acres for \$1,350,000. Among the lands acquired by the university were the former Blind Institute (later the Texas School for the Blind) in 1925; the Cavanaugh homestead on Waller Creek in 1930; and the grounds of Texas Wesleyan College and property on Whitis Avenue in 1931.

Other lands and lots were acquired throughout the university's history, and the campus land now totals more

than 350 acres. The J.J. Pickle Research Campus, a 476-acre site eight miles north of the main campus, houses research organizations in engineering, science, and the social sciences. The Montopolis Research Center is located on 94 acres in southeast Austin. The main university also has attached to it the University of Texas at Austin McDonald Observatory site in Jeff Davis County, the University of Texas at Austin Marine Science Institute at Port Aransas, Winedale Historical Center near Round Top, the Bee Cave Research Center west of Austin, Paisano Ranch, the Sam Rayburn Library in Bonham, and the Institute of Geophysics in Galveston.

Many of the early buildings owe their Spanish Renaissance-style architecture to Cass Gilbert of New York, who designed the first library building, and Sutton Hall. Paul P. Cret of Philadelphia supervised the development of structures built between 1932 and 1945, many of which were temporary frame buildings because of the prohibition against using general revenue to construct university buildings. The increased enrollment after World War II necessitated yet another era of temporary housing and classrooms. Eventually, between 1950 and 1965, 19 buildings were constructed or acquired, and in 1965 the university was granted the right of eminent domain to acquire through purchase the lands adjacent to the existing campus.

African Americans finally gained admission to the university for the first time in 1950, following the U.S. Supreme Court's decision in *Sweatt v. Painter*. During 1966–67, 27,345 students were enrolled in the main university, including 4,307 graduate students.

On March 6, 1967, the Texas legislature voted to officially change the name of the main university to University of Texas at Austin. Celebrated alumni include Lady Bird Johnson, Walter Cronkite, Lloyd Bentsen, Bill Moyers, Frederico Peria, and Edwin Dorn. Among the distinguished faculty members of the UT Austin faculty are several Nobel Prize winners, including 1995 recipients Jean-Marc Bouju of the Associated Press for feature photography and Lucian Perkins of the *Washington Post* for explanatory journalism.

The facilities are top notch, including the fifth-largest academic library in North America, with approximately 7 million volumes, 5 million pieces of microfilm, 30 million pages of manuscripts, and on-line access to hundreds of databases and other electronic resources. The library has its own, separately administered system comprised of the General Libraries, the Tarlton Law Library, and the Harry Ransom Humanities Research Center. Of these, the General Libraries are made up of The Perry Caraneda Library (the main library); the Undergraduate Library; the Nerrie Lee Benson Latin American Collection; and the Center for American History, which includes the University Archives, the Sam Rayburn Library and Museum in Bonham, and the Eugene C. Barker Texas History Center.



University of Texas at Austin

Cultural and entertainment facilities include the Performing Arts Center (a complex of several theaters, performance halls, and workshop and rehearsal spaces); the Franklin C. Erwin Special Events Center (with a seating capacity of 18,000); the Archer M. Huntington Art Gallery; and the Lyndon B. Johnson Library and Museum, among others.

The student body at the University of Texas at Austin is composed of students from all 50 states. The average SAT score of freshmen in 1995 was 1217, more than 300 points higher than the national SAT average of 902. Estimated tuition and fees plus living expenses and associated educational costs totaled \$7,614 for a student living at home, \$10,606 with campus housing, and \$12,188 with off-campus housing.

Although originally conceived of as a system of schools, the University of Texas System wasn't officially referred to as such until 1967. The state's system of higher

education was reorganized then, combining existing educational institutions with newly established ones to form an entity which currently ranks among the ten largest systems of higher education in the United States. Today, the University of Texas System is governed by a nine-member board of regents selected from different parts of the state, nominated by the governor, and appointed by the senate for six-year terms; the board has been administered by both the presidential and chancellorship forms. Logan Wilson and Harry Hunt Ransom are among those who have served as head of the system's administration.

As part of the overall drive to streamline administrative and economic efforts among the university components, the health science centers, cancer center, and nursing school were organized in 1972, a by-product of which was the coordination of university-wide programs in specific health areas. Under the administrative control of these three medical units were several individual institutions.

Over the last 100 years, the UT System has grown to its present combination of 15 universities (9 of which are academic), 6 medical schools, health science centers, a cancer center, and a nursing school. Total student enrollment is approximately 147,374. With 69,000 employees, an administrative staff of 426, and an administrative budget of \$30.4 million (supporting schools with a combined budget of more than \$4.5 billion), the UT System ranks as the fifth-largest employer in Texas.

The University of Texas at Austin was both the largest and the oldest component institution in the system, and it included the University of Texas at Austin, McDonald Observatory at Mount Locke, and the University of Texas at Austin Marine Science Institute in Port Aransas. The other general academic institutions which combined to form the system were the University of Texas at Arlington, the University of Texas at Brownsville and Texas Southmost College, the University of Texas at Dallas, the University of Texas at El Paso, the University of Texas Health Science Center at Houston, the University of Texas-Pan American in Edinburg, the University of Texas of the Permian Basin in Odessa, the University of Texas at Tyler, and the University of Texas at San Antonio, which also included the University of Texas Institute of Texan Cultures at San Antonio. A brief historical sketch of each branch follows.

The University of Texas at Arlington. Established as Arlington College in 1895, the college first changed its name to Carlisle Military Institute in 1901 and then again to Arlington Training School in 1913 before becoming a junior college branch of Texas Agriculture and Mechanical College. The school changed its name several more times and in 1959 became a four-year college, awarding its first baccalaureate degree in 1961. The school joined the University of Texas System in 1965, adopting its present name in 1967.

The University of Texas at Brownsville-Texas Southmost College. Originally established in 1973 as an upper-level extension center of Pan American University in Edinburg, Texas, the University of Texas at Brownsville in 1991 joined Texas Southmost College—a lower-level, community college with a presence in Brownsville since 1926. The goal of this partnership was to offer students in the Rio Grande Valley the opportunity to pursue programs and degrees typical of a four-year college without sacrificing their opportunity to explore vocational, technical, developmental education, and continuing education classes more typical of a community college. More than 1,700 students study everything from one-day seminars to full credit courses. Both schools are located on the grounds of the historic Fort Brown, established by General Zachary Taylor in 1846.

The University of Texas at Dallas. Originally the Southwest Center for Advanced Studies (1961), the University of Texas at Dallas was established in 1969 by an

act of legislation which enabled the privately funded graduate research center to transfer to the state of Texas. The school's first class of upper division undergraduates was admitted in 1975.

The University of Texas at El Paso. Established in 1913 as Texas State School of Mines and Metallurgy, the school is the second oldest component of the UT System. The first campus, located on land that is now part of the Fort Bliss Army post, was destroyed by fire. The school moved in 1916 to the present campus in the western foothills of the Franklin Mountains. Its Bhutanese architecture is unique among most American schools; the campus looks more like exotic Oriental castles than the modernistic, stacked cubes of classrooms erected on other campuses. Known as UTEP, the school first offered instruction at the post-secondary level in 1914 and awarded its first baccalaureate degree two years later, in 1916. The school then became a branch of the University of Texas in 1919, changing its name a year later to the Texas College of Mines and Metallurgy. In 1949, the school changed its name to Texas Western College. The present name was adopted in 1967.

The University of Texas-Houston. Founded in 1972, the University of Texas-Houston is an institution of the health sciences: medicine, dentistry, public health, nursing, allied health, and biomedical science. The university serves a student body of approximately 3,100, conducts biomedical research valued at \$95 million per year, and provides health care through nearly 1.5 million outpatient visits and inpatient admissions per year.

The University of Texas Pan American in Edinburg. Located in the Rio Grande Valley, 75 miles from the Gulf of Mexico and South Padre Island, Texas, UT Pan American began in 1927 as Edinburg College. After six name changes, the university joined the University of Texas System on September 1, 1989. Today, more than 13,000 students are enrolled at the main campus in Edinburg, Texas.

The University of Texas of the Permian Basin. Authorized by the Texas legislature in 1969 as an upper-level university offering junior, senior, and graduate-level programs, the University of Texas of the Permian Basin achieved four-year status and began offering freshman level courses in September 1991. Enrollment is approximately 2,300; 70 percent are undergraduates, 30 percent are graduates. Many of the students commute from the surrounding Permian Basin region. Although most are older employed full-time or part-time, there has been a corresponding increase in the number of traditional, college-age students since the university achieved four-year status. The 600-acre campus is in West Texas, midway between Dallas and El Paso.

The University of Texas at San Antonio. Created by a mandate from the 61st Texas legislature on June 5, 1969, the school was designed to be a university of the highest caliber, offering undergraduate and graduate degrees. The

first class was admitted in June 1973. The UTSA is one of the fastest-growing universities in the state, with an enrollment of approximately 17,000.

The University of Texas at Tyler. Created in 1971 as an upper-level university—Tyler State College—the school then became Texas Eastern University in 1975, joining the University of Texas System in 1979. The university's mission was changed by the Texas legislature in 1997 to include lower division classes, as well. Effective in the summer semester 1998, the university began enrolling freshmen and sophomore students.

Further Reading: For a closer look at the University of Texas System and its component institutions, see *In the Beginning of the University of Texas*, by Carl J. Eckhardt (Austin: University of Texas, 1979), and *A Source Book Relating to the History of the University of Texas* (University of Texas Bulletin 1757, 1917). For a concise summary of the individual component institutions, read *The New Handbook of Texas* (Austin: Texas State Historical Association, 1996).

—Elizabeth Taggart

UNIVERSITY OF THE SOUTH (Sewanee, Tennessee, U.S.A.)

Location:	Atop the Cumberland Plateau in Sewanee, Tennessee, between Nashville and Chattanooga.
Description:	An independent institution affiliated with the Episcopal Church enrolling approximately 1,200 students and awarding degrees of baccalaureate, master of divinity, and doctorate of ministry.
Information:	Office of Admission University of the South 735 University Avenue Sewanee, TN 37383-1000 U.S.A. (615) 598-1238
Visiting:	Call (800) 522-2234 or (615) 598-1238 to schedule an interview and a tour of the campus.

The University of the South, perhaps more than any other American university, suffered the effects of the American Civil War and the harsh economic circumstances of Southern Reconstruction that were to follow. Founded in 1857 and chartered in 1858, the formation of the University of the South came to a temporary halt in the early 1860s when one of the school's principal founders was called into military duty by Jefferson Davis himself. The war also took its toll on the school's property, as newly constructed buildings were razed by army battles and occupations. By the end of the Civil War, even the university's cornerstone had been destroyed, broken into pieces to be kept as war mementos.

The idea for the University of the South may be traced to an Episcopalian church convention in Tennessee in 1832, some 25 years prior to its actual founding and 36 years before the first class was held. During this convention the Reverend James Hervey Otey, who soon after became the Bishop of Tennessee, proposed that the Tennessee diocese establish an Episcopalian school of theology and classical learning. Although no immediate action was taken toward this end, only three years later Otey and the Reverend Leonidas Polk (who would later become Bishop of the Southwest, comprising Arkansas and Louisiana) began raising monies for the purpose of establishing a university that would be owned and administered jointly by the dioceses of Tennessee, Mississippi, and Louisiana. The idea to expand the base of financial

resources to Mississippi and Louisiana was, in retrospect, a step in the right direction; however, the economic climate of 1837 persuaded the two men to shelve their aspirations temporarily.

While Otey and Polk are credited with being the chief visionaries in the formation of the University of the South, their dream of a large-scale, church-sponsored university was essentially pragmatic. By the late 1850s the Baptist, Methodist, and Presbyterian denominations were responsible for establishing more than half of the institutions of higher learning in the south, and these denominations had become reasonably well established in southern society. The Episcopal Church had a much smaller membership in the south; Otey and Polk, who were both founding bishops of their respective dioceses, saw that the surest way to solidify the role of the Episcopal Church in southern culture was to establish, first, a school of classical learning that would lend prestige to the Episcopalian cause and, second, a theological school that would train young men to be ministers, teachers, and leaders in their communities.

In the wake of the first failed attempts to form a university that could achieve these goals, Otey and Polk helped to found the Female Institute in Columbia, Tennessee. The Female Institute was a modest success, but other attempts by Otey to establish Episcopalian centers for learning failed. Mercer Hall in Columbia and Ravenscroft College outside of Columbia were both short-lived owing to lack of financial support.

In 1851 Otey traveled to Europe for a full year to recover from a series of illnesses that had befallen him. There he visited with the Archbishop of Canterbury as well as going to several institutions of higher learning in England, France, Prussia, Switzerland, and other neighboring countries. These visits confirmed in Otey the desire to establish a university in Tennessee that was similar in atmosphere and purpose to those he observed in Europe. His visits were productive in another sense as well: he initiated several key relationships with scholars and administrators at European universities, some of whom would come to the aid of the University of the South in its crucial early years.

As the south reached new heights of prosperity in the 1850s, Bishops Otey and Polk again revived the idea of an Episcopal institution of higher learning that would combine the cultural values of the American south with the academic traditions of Europe. In the summer of 1856, Bishop Polk drafted a letter to the bishops of the other nine southern dioceses outlining his proposal for a church-sponsored university. In this letter Polk set forth



University of the South

in great detail the necessity of such an enterprise and suggested that the church's leadership take up the discussion in earnest at the general church convention in October of that year. Polk's proposal did indeed gain the support of church leadership, and in October a declaration of intent to establish a university was signed by all ten bishops of the southern dioceses.

The declaration further elaborated on the resolutions outlined in Bishop Polk's letter, most notably that the university would be owned and administered by all participating dioceses; that an initial endowment of \$500,000 would need to be raised for the purpose of establishing the university; and that, ideally, the school would be located near Chattanooga (this region was chosen for its connection via railroad lines to major cities of the north and south).

On July 4, 1857, representatives from seven southern dioceses of the Episcopal Church met at Lookout Mountain near Chattanooga to elect officers and to found the university. The date chosen for this meeting was purposeful, as Bishop Otey's address to the crowd of nearly 500 onlookers implies:

We affirm that our aim is eminently national and patriotic . . . not of political schism. . . . We contemplate no strife, save a generous rivalry with our brethren, as to who shall furnish to this great republic the truest men, the truest Christians, and the truest patriots.

Otey's nationalist rhetoric, however, would soon be modified when his institution expressed its loyalty to the Confederate cause.

The next step was to secure property in a favorable location. At some time between the founding of the university in July, 1857 and the meeting of the executive committee in November of that year, a prominent geologist and civil engineer was contracted to investigate several possible sites in the general vicinity of the Cumberland Plateau, particularly Chattanooga, Huntsville, McMinnville, Cleveland, Atlanta, and Sewanee. The communities of Chattanooga and Huntsville campaigned by offering land, natural resources, and monetary gifts to the fledgling institution. Criteria for site selection included degree of elevation above sea level, water supply, availability of building materials, proximity to railroad lines and roads, temperateness of climate, and pleasantness of landscape; in the end, however, it was the generous offer of 10,000 acres of land and free shipping of 20,000 tons of freight made by Samuel F. Tracy of the Sewanee Mining Company and other local citizens that swayed the executive committee to choose Sewanee as the home of the University of the South. To this day, the 10,000-acre domain atop the Cumberland Plateau remains a key component of the university's unique character.

The name of the university was also chosen at the November meeting, after some deliberation. Other names considered were "The University of Sewanee" and "The Church University," each reflecting a different vision of the university's role. That committee members chose a grander and more inclusive title for the school attests to their more ambitious aim: to establish a university that would represent culturally the entire region of the south. The naming of the university also suggests that committee members believed they could create—in nearly finished form—an institution that would compare favorably with the more established universities of the north in regard to atmosphere, personnel, and financial resources. Bishop Polk stated as much in a letter written to cofounder Stephen Elliott, Bishop of Georgia:

There is no reason why . . . we might not in five years have a Church University which would rival Harvard or Yale. . . . A movement of some kind is indispensable to rally and unite us, to develop our resources and demonstrate our power.

This fierce sense of optimism among executive committee members, although crucial at the time of the university's founding, would prove to be an obstacle in the economically troublesome years that followed the Civil War.

On the heels of the November meeting, the State of Tennessee granted the university its charter on January 6, 1858. This accomplished, Bishops Polk and Elliott gave their attention to the work of raising revenues. As outlined in Polk's letter of 1856 to the bishops of the ten southern dioceses, their initial goal was to raise \$500,000, a sum upon which they would draw interest and, in turn, use only the interest to fund construction and operation of the university. It was Polk's idea to raise this sum in one diocese alone and so demonstrate the feasibility of their goals to the remaining dioceses. This was nearly accomplished in the spring of 1859 as Polk and Elliott traveled through the Louisiana diocese soliciting financial support from wealthy plantation owners and others. By tour's end, the two bishops had raised more than \$478,000 in cash, bonds, and promissory notes.

The apparent ease with which Polk and Elliott had raised the initial endowment for the university inspired trustees to make preparations for the laying of the cornerstone. The actual ceremony and accompanying festivities took place on October 10, 1860. As plans for the layout of the campus had not yet been finalized, the six-ton marble cornerstone was placed on large sandstone supports at the site's highest point of elevation. The ceremony began in the late morning as some 5,000 onlookers followed a procession of church and university leadership through the wilderness to where the cornerstone was temporarily laid.

Following the ceremony, trustees met to agree upon the constitution and statutes of the university, part of

which stipulated that the board of trustees was to be comprised of the bishop, ■ clergyman, and two laypersons from each of the ten participating dioceses. The clergyman and two laypersons would be elected at their own diocesan conventions. The constitution and statutes also stipulated that each member of the board of trustees would have an equal vote. Arthur Benjamin Chitty Jr., a chief historian of the University of the South, notes that this arrangement was designed to "counterbalance the idealistic and spiritual thinking of the bishops against the hard practicality of the realistic laymen and would prevent domination by either group."

All of these detailed plans, however, were made nearly obsolete by the course of events that began in December 1860, when South Carolina seceded from the Union. Bishop Elliott of Georgia, who now resided in Sewanee, supported the secession of all southern states and actively campaigned for southern dioceses of the Episcopal Church to become independent of their northern counterparts. This action was formally taken at a special convention in Montgomery, Alabama in July 1861. The dilemma that the war between the North and South represented for the school's founders, however, is perhaps best manifested in the actions of Bishop Polk, who more than once declined the commission of major-general given to him by Jefferson Davis, reasoning that others were more qualified than he to serve in such a capacity and for such a cause. Later events would serve to change his mind. While in New Orleans in April 1861, Polk learned that his home in Sewanee had been burned to the ground by unidentified persons and that his wife and family had barely escaped. This incident occurred the same night that shells were fired against Fort Sumter in Charleston, South Carolina. Polk, who was a graduate of the military school at West Point, finally accepted his command in June 1861.

The war destroyed all hopes of opening the University of the South on a grand scale as a large, fully operational institution. Much of the landscape of the south lay in ruins, property values plummeted, and plantation owners were forced to cease production owing to the severe labor shortages associated with the emancipation of the slave population. The most critical consequence of the war for the university, however, was that its original benefactors were no longer able to provide the financial backing they had promised. This meant that a new fund-raising effort would have to be undertaken at a time when most, if not all, southern dioceses were barely able to finance their own essential operations. Also damaging to the cause of the University of the South were the losses of Bishops Otey and Polk. Otey succumbed to illness in Memphis in April 1863, and Polk died in battle in June 1864. Bishop Elliott, although managing to reconvene a portion of the board of trustees in October 1866, also died before resumption of plans to open the university actually took place.

Leadership then fell to the Reverend Charles T. Quintard, newly elected bishop of Tennessee and protégé of Bishop Elliott. At the Tennessee diocesan convention in September 1865, it was resolved that the diocese of Tennessee alone should take measures to establish a seminary at Sewanee. This attempt to establish ■ modest center for learning—in contrast to the original intent to create a bustling, fully operational university out of the wilderness—was necessitated by political and economic circumstances. Moreover, executive committee members were very aware of a clause in the deed to the property which stated that ownership of the domain would revert to its original owners if ■ school were not functioning on the premises within ten years of its donation. Although committee members clearly conceived of the theological school as merely the first step toward ■ larger enterprise, it was the establishment of ■ small-scale seminary at the site designated for the University of the South that essentially secured the committee's rights to the domain and made possible all later developments.

In January 1866, Bishop Quintard and two colleagues addressed to the remaining members of the executive committee a letter outlining plans by the Tennessee diocese to open a theological school. The three men also proposed that ■ boys' preparatory school be established at the Sewanee domain and toward this end called for all diocesan treasurers to collect on pledges made to the University of the South before the war. Characteristically, those individuals most involved in the formation of the university were overly optimistic. Although Quintard's letter was met with some enthusiasm, the monies promised to the school's founders were simply unavailable in the postwar economy.

Still, in February 1866, construction began on the first university building, Otey Hall, under the direction of George R. Fairbanks, commissioner of lands and buildings. This wood structure was built to house the activities of the divinity school and was financed primarily by the fundraising efforts of Quintard as he traveled through his diocese. In March a Dr. Merrick became director of the divinity school, but he left within ■ year. The basic means to instruct students now existed, but it is unclear whether any students attended the school during Dr. Merrick's short tenure.

Plans to reestablish the University of the South were considered on October 11, 1866. Bishop Elliott, in his last official act as third chancellor of the university (Otey first held the title and Polk succeeded him), presided over a meeting of 9 of the original 40 members of the board of trustees who had convened expressly to discuss the future of the university. While the number of members present was not sufficient to take formal action according to the school's constitution and statutes, those in attendance agreed that earnest attempts to resurrect plans for the university should be made. Notably, Bishop Quintard agreed to remain chief fundraiser for this undertaking.

Upon the death of Bishop Elliott, William Mercer Green, bishop of Mississippi, was elected fourth chancellor of the University of the South. Under his administration, the divinity school finally opened, and fundraising efforts for the university continued. At the behest of the board of trustees, George R. Fairbanks planned to travel to Louisiana to see which, if any, prewar pledges could be collected. Bishop Green addressed a letter to all previously associated dioceses requesting they resume their financial participation in the enterprise. In the spring of 1867, Quintard and Fairbanks traveled to Louisville in search of financial backing. Quintard also traveled to Georgia and South Carolina, but to no greater avail. Each of these fundraising efforts proved only mildly successful.

As it became increasingly clear that the economic climate in the south would remain hostile to their cause, the board of trustees resolved in August 1867 that the reach of fundraising efforts be extended to the Church of England. Bishop Quintard, now vice-chancellor of the university, was thus sent to England, where he quickly secured the endorsement of the Archbishop of Canterbury. Aided by other Anglican church leaders sympathetic to his cause, Quintard raised a considerable sum. A skilled and charismatic orator, Quintard augmented this income by preaching in pulpits throughout England, for which he received offertories. In total, Quintard raised approximately £2,500 over the course of his eight-and-a-half month trip to England. He also accepted books donated by Oxford University and Cambridge University.

On the basis of Quintard's success abroad, the board of trustees moved ahead with plans to open the university. Consistent with the trustees' new-found sense of restraint, a junior department was created to teach younger students at the college preparatory level. The executive committee pursued a headmaster and teachers for this purpose, and, in September 1868, the University of the South opened its doors to nine students, all of whom had been personally invited to attend the school. These male students (women were not admitted until 1920 and were not awarded degrees until 1971) ranged in age from 12 to 19, and it was not until a year later that a formal division was made between the grammar school and the junior department. By the fall of the following year, a total of 86 new students had enrolled and attended classes, and in the spring term of 1870 another 95 students were admitted.

Perhaps because of this apparent progress, members of the executive committee and trustees continued to overestimate severely their base of financial resources. Commissioner Fairbanks conveyed to the trustees his belief that a large stone structure, estimated to cost \$30,000, could be financed over the period of its construction, approximately three years. In reviewing the institution's financial assets, the finance committee made the crucial error of estimating values at prewar rates. Additionally, it was not until the summer of 1870 that Fairbanks fully real-

ized the complete loss of the prewar Louisiana pledges. One fact, however, was becoming increasingly clear to all involved: the plan of Otey, Polk, and Elliott to fund and operate the institution drawing only on the interest and investments gains from a large principal endowment was no longer attainable. Whatever aid could be gotten from the southern dioceses or from benefactors in England would have to be spent as circumstances required.

Following these miscalculations, the executive committee—now comprised only of Quintard and Fairbanks—authorized construction of several new buildings on the campus intended to accommodate the hundreds of new students projected to enroll at the university. Once they realized that these costs were beyond the school's financial means, the board of trustees was forced to seek a loan in the sum of \$10,000 in 1872. The process of obtaining the loan from the New York-based United States Mortgage Company was a sobering affair for trustees; they saw that northern investors were reluctant to invest resources in southern enterprises. Still, the loan was successfully negotiated.

All was not grim, however. In the name of elevating the school's operations to the university level, the board authorized the creation of seven university departments that had been prescribed in the original constitution and statutes: chemistry, civil engineering, mathematics, metaphysics, modern languages, ancient languages, and moral science. Initially, professors were hired to teach in six of these departments. Also, in the years 1870–72 a village community began to grow and flourish at Sewanee. The number of leases granted by the university tripled over the course of this period, and the number of homes in the village alone reached 100. This expansion was owed in part to Quintard's solicitation of skilled laborers and their families during his fundraising trips.

The remainder of the 1870s saw several maneuverings on the part of university trustees to maintain credit ratings, including the reduction of faculty salaries and consolidation of high-level administrative positions. In order to pay off existing debts, a second loan from the United States Mortgage Company in the sum of \$25,000 was secured. The timing of this loan may have been fortuitous. In the years 1878–79 a yellow fever epidemic in the region caused enrollment to fall off considerably, and the loss of income from student tuition would have been disastrous had reparations not been made on previous debts.

The university's finances were now largely under the supervision of the Rev. Telfair Hodgson, first dean of the theological department and later third vice-chancellor of the university. Under Hodgson's direction the university's financial standing finally stabilized. As a consequence, the next 25 years were devoted to the construction of permanent buildings on the campus. The first stone structure, Hodgson Library, was begun in 1876, followed by St. Luke's Hall in 1877. Thompson Hall (1883), Walsh Memorial Hall (1891), Hoffman Memorial Hall (1898),

and Quintard Memorial Hall (1901), all designed in the architectural style of Oxford and Cambridge, soon followed. These buildings were financed through the gifts of benefactors.

The University of the South emerged from the dark years of Southern Reconstruction to become a thriving center of academic tradition and learning, and had ample cause to celebrate its 125th anniversary in 1981. Today, the university is home to a wide array of departments in the liberal arts and sciences as well as to a school of theology. Although significant changes have taken place since its founding in 1857, the University of the South has managed to maintain the unique blend of southern culture and Oxfordian spirit and architecture envisioned by its founders.

Further Reading: Two volumes detailing the history of the University of the South are *Reconstruction at Sewanee: The Founding of the University of the South and Its First Administration, 1857–1872*, by Arthur Benjamin Chitty Jr. (Sewanee, Tennessee: The University Press, 1954), and *History of the University of the South at Sewanee, Tennessee*, by George R. Fairbanks (Jacksonville, Florida: H. and W.B. Drew Company, 1905). Moultrie Gerry's *Men Who Made Sewanee* (Sewanee, Tennessee: The University Press, 1981), which has been republished with additional chapters by Arthur Benjamin and Elizabeth N. Chitty, offers a closer look at the personal lives of the school's founders and chief architects.

—Christopher Hudson

UNIVERSITY OF THE WITWATERSRAND

(Johannesburg, South Africa)

Location: Situated in Johannesburg, the largest metropolitan area and industrial and commercial center of South Africa. Also known as "The Rand," a 150-mile ridge located in northeast South Africa which contains the world's largest gold field, producing two-thirds of the world's gold. Located 31 miles from Pretoria, South Africa's capital.

Description: The main campus is at Milner Park in Johannesburg, occupying 168 acres, and includes the recently developed West Campus, where the departments of law, education, commerce, and a portion of engineering are located. The Medical School is located in Parktown, approximately five miles from the main campus.

Information: Admissions Office
Senate House Concourse
University of the Witwatersrand
Private Bag 3
WITS 2050 South Africa
Admissions (001) 716 8003
Main (011) 716 1111

Shifts in the local economic landscape and world events throughout the early part of the twentieth century have shaped the growth and direction of the University of the Witwatersrand. The school's roots have their origins in the South African School of Mines in Kimberley, which opened in 1896 and moved to Johannesburg in 1904. There it was incorporated into Transvaal Technical Institute. By 1910, it had been renamed South African School of Mines and Technology. Ten years later, it was named a university college, with university status established by Private Act of Parliament, Act. No. 15 of 1921. On March 1, 1922, the University of Witwatersrand officially opened with 6 schools with 37 departments, 73 academic staff members, and a little more than 1,000 students studying the arts, sciences, medicine, engineering, law, and business.

The combined discovery of the diamond fields of Kimberley and Griqualand West during the 1870s, followed by the unearthing of the gold fields of Johannesburg and the Witwatersrand in the 1880s spawned South Africa's first industrial revolution. As a result, within a single generation the foundation of South Africa's economy metamorphosed from an agrarian to a capitalist system based

on mining. In response to these rapid economic changes, the initial effort was made within South Africa itself to establish the facilities for training professional men to meet the needs of the rapidly expanding mining industry. And herein lie the roots and evolution of the Witwatersrand University.

In 1890, the Council of the South African College elected to open "a School of Mines in South Africa" in Cape Town. A conflict then arose concerning the physical location of the college. Should the School of Mines be located in Kimberley, the mining town, or in Johannesburg, the mother city with a lengthy tradition as a center of education? Compromise was reached in the form of a 1894 parliamentary motion that proposed that professional training be taught at the South African College in Cape Town. It was then decided by parliamentary motion that technical and practical training would be conducted at Kimberley, and that Johannesburg should not be excluded if the necessary facilities could be provided. Because of the high cost of living the students incurred in Johannesburg, both the third- and fourth-year courses in mining were consolidated in Kimberley. In 1895, the Witwatersrand Council of Education was formed by the leaders of the gold mining industry of the Witwatersrand for the purpose of teaching English-language education.

Also in 1895, the Council of the University of the Cape of Good Hope met to discuss a proposal made by the Council of the South African College. The college set forth the following objective: "to bring within the reach of young men, throughout South Africa, the opportunity of qualifying themselves in their own country, for a profession which has hitherto been filled chiefly by experts trained elsewhere." Ultimately, this led to the founding in 1896 of the South African School of Mines in Kimberley, and endorsed by the De Beers Consolidated Mines. In 1896, J.S. Lawn, a distinguished graduate of the Royal School of Mines in London, was appointed as the first professor of mining, stationed in Kimberley. Later, he became principal of the South African School of Mines in Kimberley. Enrollment, however, was small through the 1890s, with only 12 to 14 new students admitted yearly. The South African War in October 1899 put an end to the school's activities until July 1900.

By August 1903, the Transvaal Technical Institute was established, replacing the Kimberley School. The same mining curriculum offered at the Kimberley School was followed at the new school. The first class met on March 29, 1904, in temporary quarters, which had first been



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used as a cigar store. The only academic awards the institute could confer on students were diplomas and certificates, not university degrees. Thus, the institute functioned more as a trade school than an institution aspiring to claiming university status. In July 1906, the school's name was changed to Transvaal University College. Two years later, the functions of the college were divided. Engineering and technical training along with law classes proceeded in Johannesburg and the arts and sciences were relegated to Pretoria.

Also in 1906, the sum of £200,000 (the value of his Frankenwald estate) was bequeathed to the college by Alfred Beit "to be applied towards building and equipping the university" to be called the University of Johannesburg. The gift, however, came with a provision: if the money was not used to establish this university within ten years of his passing, the money would be returned to his estate. However, the sole beneficiary of Alfred Beit's estate was his younger brother Otto. Apparently, Alfred Beit (a partner with Wernher in Johannesburg's largest gold mine) had in mind the building of a University of Johannesburg on the Frankenwald estate. It would then serve the educational needs of both Johannesburg and Pretoria. The Transvaal

government, though, did not consider Frankenwald a suitable site for a university.

As the former colonial secretary in the Transvaal government, General Jan Smuts was responsible for higher education there. He was keenly aware of and supported the government's plans for a reorganized system of national education. With this idea in mind, Smuts met with Otto Beit (Alfred's brother) during a London business trip. His strategy was to steer Otto Beit to giving favorable consideration to establishing a national university at Groote Schuur. Beit told Smuts that he no longer felt bound to Frankenwald and instead preferred the Groote Schuur site to found a South African university. In a letter to Smuts, Beit wrote from London on August 19, 1910, "I have fully discussed the matter with Sir Julius Wernher . . . and . . . provided the government renounces the legacy by my late brother of £200,000 for the Johannesburg University on the Frankenwald estate, be it either by Act of Parliament, or by any other means to the satisfaction of my legal advisers, I will give an equal amount for the scheme of which you now write."

The letter was accompanied by another letter to Smuts penned by Sir Julius Wernher, who wrote: "The idea of a South African University appeals to us very much on sen-

timental and practical grounds and we are glad that you are putting it forward. Assuming that the bequest . . . can be diverted, I shall be very happy to contribute say £200,000, and if it is found that £500,000 is necessary, Mr. Otto Beit and myself would find the difference of £100,000." Smuts clinched the deal by an enthusiastic cable of acceptance on behalf of the government which were now committed to the Groot Schur scheme for a national university.

During this time, strong rivalries existed between Pretoria and Johannesburg for the site of the proposed university as well as among other colleges, and the various colony governments would not make a move until a proposed Inter-Colonial Conference on University Matters had met and until the governments of South Africa had arrived at a decision on the question of university policy.

With the granting of responsible government to the Transvaal in 1908, with Pretoria as the seat of government, there was a demand for proper facilities for higher education. The situation was resolved by dividing the functions of the Transvaal University College. A dual system was then introduced under which engineering and technological training continued at Johannesburg, together with classes for the law certificate examination. The arts and sciences departments became the responsibility of the Pretoria branch. In 1910, the Transvaal Parliament passed an act that finally allowed the two institutions to become independent. The one in Johannesburg was renamed the South African School of Mines and Technology, while the one in Pretoria retained the title of Transvaal University College.

Then in April 1913, a parliamentary bill was introduced for the establishment of a new University of South Africa. Subsequently, the bill was withdrawn because the University Commission had requested the establishment of two universities, one in the south and one in the north. The Johannesburg School of Mines and Technology then would be recognized as the school of technology for both universities. Of the total Wernher-Beit endowment, £400,000 would go to Cape Town and £50,000 each to Pretoria and Johannesburg. At a conference in Capetown on December 17, 1915, attended by representatives of all the colleges, the minister informed those present that while they were welcome to discuss the details, they "could not deal with the principles, the government having decided to found three universities."

The worst feature of the new bill that incorporated the School of Mines with the other colleges was a clause stipulating that no development of any kind could be undertaken at any of them without the express permission of the Minister of Education. After much protestation in Parliament, the minister finally agreed that a constituent college could promote legislation "providing for the incorporation of such colleges as a university." Although the way was cleared for establishing a univer-

sity, not at Johannesburg, but at Witwatersrand, funds, nevertheless, were badly needed.

The city of Johannesburg donated the Milner Park site of 80 acres. Another 12 acres was given by Transvaal Consolidated Lands, along with generous financial support from the cities of Johannesburg, Reef, and Vereeniging together with the Transvaal Chamber of Mines, the Witwatersrand Council of Education, and the support from the general public. Ultimately, the Witwatersrand University owes its existence to the overwhelming civic support of the entire Witwatersrand community together with the 72-member Witwatersrand University Committee and the Witwatersrand College of Education. Nine new departments were established in 1917 to provide pre-medical and predental training. A men's dormitory, the first building erected on the new campus, was ready for the 1921 academic session.

On 1919, Jan Hofmeyr, at age 24, was appointed principal of the South African School of Mines and Technology. Later that year on August 1 by act of Parliament, the University College of Johannesburg was established. Three years later, the government transferred the Frankenwald estate to the university.

The academic staff, led by Hofmeyr as president, was composed of nearly 60 professors, senior lecturers, and lecturers. Because of a strike, the official opening ceremony was postponed more than six months when conditions returned to normal. Hofmeyr, who went on to play a greater role in South Africa's history, was succeeded in 1925 by Sir William Thompson, who held the president's post for two years.

The period between 1917 and 1922 marked a steady build-up of faculties and departments that afforded the university a broad academic base, thanks in part to the men who had come from the United Kingdom and who were typical products of the older as well as the younger universities.

On June 23, 1925, England's Prince of Wales (who was to become Edward VIII) made an official visit to the university to open the Main Block and to receive an honorary degree of doctor of laws. In 1928, Humphrey Raikes assumed the president's post, which he held until 1953. By 1939, the number of students had increased to a total enrollment of 2,544. The number of academic departments grew from 37 to 44, while the full-time academic staff expanded from 60 to 105 members. The school of dentistry opened in 1929, and the school of architecture and fine arts in 1940.

The slow progress in erecting buildings on the Milner Park campus reflected only one aspect of the very severe financial restrictions the university faced between the two world wars. The years of depression that preceded South Africa's departure from the gold standard in 1932 only made the problem of trying to make ends meet more difficult. As a result, the school was mired in a near constant state of bankruptcy. The only substantial

source of revenue was from student fees, already the highest of any of the country's universities. In spite of the hardships, the university did graduate an impressive number of students. From 1922 to 1939, 2,998 students were awarded diplomas.

Four new buildings were built from 1925 to 1945 including the Isabel Dalrymple House (1928), a women's residence; the main library (which had been totally destroyed by fire in 1931 and was replaced with a separate fire-proof building); the Bernard Price Institute for Geophysical Research (1936); and Hillman Block (1940), which houses the departments of civil engineering and surveying. In addition, those years saw the completion of the Central Block that contained the Great Hall where graduation ceremonies were held and the Douglas Smit House (1945) where African medical students were housed.

The great technological strides that were gaining momentum throughout the world required trained engineers and scientists for industry and research purposes. The tremendous advances of the early 1940s caused South Africa to realize the need to manufacture and export more sophisticated goods. This realization spurred the country's push for both fundamental and applied research.

Prior to World War II, South Africa's government viewed the financial support of its universities as a "liability," with funding kept to a minimum. After the war, when rebuilding efforts peaked, civic leaders realized the vital services colleges and universities could provide for a country on the move, which led to a significant change in the government's position. To further that end, the Holloway Commission was formed in 1951. Two years later, it issued a report that placed the financial relationship between the state and universities on an entirely new footing. Now, it was the state's responsibility to provide the major part of the revenue required to maintain satisfactory minimum standards of university education. The expenditure per student at the university rose from R 170 in 1922 to R 219 in 1939 to R 713 in 1970.

During the 1950s and 1960s, the campus landscape expanded to include the Oral and Dental Hospital (1952), built at a cost of R 1 million and the John Moffat Building, which houses the departments of architecture, fine arts, quantity surveying, and building science. It is named in honor of a prominent Johannesburg architect who contributed R 200,000 to the university. The Humphrey Rivas Raikes, which is the home of the department of chemistry (1960), was named after the president who served the university for 25 years.

By the 1960s, the university was rapidly outgrowing the campus at Milner Park. The Johannesburg City Council donated ■ valuable open space called "The Oval." Renamed the Parktown Campus, it contains Ernest Oppenheimer Hall, the first half of the new men's residence, and the graduate school of business adminis-

tration which is housed in ■ gracious older building called Outeniqua. Also bequeathed to the university was a handsome private home known as Savernake. A donation of Dr. Bernard Price, it serves as the home of the university's president.

In 1960, the building to house the Nuclear Physics Research Unit was completed, as well as many other small structures to house equipment for such special purposes as the making of nitrogen and liquid hydrogen. In addition, three of the university's original buildings—the Physics Block, old Medical School, and South West Engineering Building, all built in 1922—underwent extensive remodeling.

The university's first development office to house permanent fundraising activities also was opened at this juncture. Wits's first computer was purchased in 1961, making it the second scientific computer in use in South Africa. During the next ten years, the original computer was replaced twice by more powerful and faster hardware.

In the late 1960s, an eight-story medical school building to house the clinical departments was completed. In addition, a new seven-story building for chemical engineering and metallurgy was constructed. These structures represented the first high-rise buildings on the university's campus.

Two central libraries—the Wartenweiler Library and the William Cullen Library—and 13 divisional libraries are located on the main campus. The Wartenweiler Library opened in April 1972 and is primarily an undergraduate teaching library for students in the arts. It contains 17,190 items. The William Cullen Library opened in March 1934 and serves the school's reference and research requirements. The university also has maintained a medical library since 1926. The campus also features 26 museums and 2 arts galleries, a theater facility, and a planetarium operated by the university.

The geology and mining engineering building and the Jan Smuts House were opened in 1962. The first Student Union building was opened in 1964, and three years later, a new social sciences building was built. In 1972, the Old Mutual Indoor Sports Center opened, named in honor of its major contributor, South African Mutual Life Assurance Society.

While other South African institutions for higher learning have varied their practices in admitting "certain categories of students," the university of the Witwatersrand is one of several South African universities that did not discriminate on grounds of "color, creed or race." However, this liberal policy was altered in late 1956, when the South African government introduced legislation in 1957 "to enforce apartheid on all universities in South Africa." The universities of Witwatersrand and Cape Town were most affected. The Extension of University Education Act that debarred non-Europeans from attending white universities passed in 1959.

Currently, the University of the Witwatersrand is composed of 10 schools with 99 departments among them. With 19,000 students served by 4,000 employees, including 1,250 academic staff, Wits now confers about 4,500 degrees annually.

Further Reading: General background can be found in *A Brief History of the University of the Witwatersrand, Johannesburg and Its Predecessors 1896–1972* (university publication, 1972).

—Michele Picozzi

UNIVERSITY OF TOKYO

(Tokyo, Japan)

- Location:** On three main campuses in Tokyo, at Hongo, Yayoi, and Komaba, with other institutes and observatories at several sites around Japan.
- Description:** “Tokyo Daigaku” (or “Todai”) in Japanese; formerly Tokyo Imperial University, enrolling over 25,000 students, is the oldest national university in Japan and the alma mater of most Japanese prime ministers and leading figures in many other fields.
- Information:** University of Tokyo
7-3-1 Hongo
Bunkyo-ku, Tokyo 113
Japan
(03) 3812 2111

When the University of Tokyo was created in 1877 it combined the elements of an entirely new institution, based on non-Japanese models; an amalgamation of three existing schools, one of them already more than two centuries old; and the role of being the latest in a series of institutions created by successive Japanese regimes for the purpose of training government officials. That latter fundamental purpose has remained constant, and for more than a century alumni of the university have occupied many of the leading positions in Japan's politics and in public administration, as well as playing important roles in business and, indeed, in literature and the arts.

This enormously prestigious institution is the expression of a very old tradition in Japan. The very term *Daigaku*, which literally means “great learning” and which was chosen to translate the English word “university,” had been known in Japanese as early as the eighth century, both as the title of one of the classics of Confucian thought imported from China and as the name of the first such institution, then located in what is now Nara, the first permanent Japanese capital, and later in Kyoto, the capital city from 794 to 1868. These older schools had been superseded during the seventeenth century by another Confucian institution, created and managed by the Hayashi family of scholars under the supervision of the Tokugawa shoguns who were the effective rulers of Japan, from their castle at Edo (now Tokyo), from 1603 onward. The Hayashi school, long known as the Shoheiko or Shohei Gakko (Shohei School) from its location on a hill in Edo called Sho-

heizaka, was taken over by the shogunate in 1797 and officially renamed the Gakumonjo, although its informal name remained in use.

Meanwhile, two other institutions had grown up in Edo to provide training in subjects developed in western countries but excluded by the Confucian conservatives of the Shohei Gakko. The Kaiseijo, or Kaiseigakko—the Development Institute or School, had been established in 1863 but could trace its origins to 1811, when a permanent body of scholars specializing in translating and analyzing European and American publications was created within the shogunate's astronomical observatory. In 1855 this group had been given a separate status, as the Yogakusho, the Western Learning Institute, renamed in the following year as the Bansho Shirabesho, the Institute for Investigating Barbarian Writings. At this point the main language studied and used was Dutch, which had been the one European language known to the Japanese since all other European powers had been excluded from trade and contact with Japan in the early seventeenth century. Within the next few years, however, training in English, French, and German was also developed, while the scope of the institute's activities was widened to include not only navigation, geography, and related subjects of relevance to the military and naval authorities, but also the sciences which, it was now clear, were playing a crucial role in the industrialization of the western powers. With around 50 scholars employed at the institute and around 200 students being sent from all over Japan to study with them, the institute set the pattern for treating higher education and research as matters in which the state could and should take a direct interest.

The other leading center of “Dutch” or “Western” studies was the Igakujo or Igakko, the Medical Institute or School. This had been created by the shogunate in 1863, on the basis of a smallpox clinic, the Shutoshu, which had been privately established in 1858 and brought under government control in 1860. Its purpose was to build on the achievements of generations of medical scholars and researchers in Japan by organizing training in European techniques.

In 1868 the Tokugawa shogunate was overthrown and replaced by a new government, acting in the name of the emperor and pledged to modernize Japan. Edo, renamed Tokyo, became the capital in place of Kyoto, and in 1869 a new Daigaku was created by merging the city's existing government institutions of higher education at a single site. The Shoheiko, which claimed seniority both because of its age and because its staff hoped that Confucianism would continue to be the official ideology, was renamed

simply the Daigaku, while the Kaisei Gakko became the Daigaku Nanko, its Southern School, and the Igakko became the Daigaku Toko, its Eastern School, in reference to their locations on the new campus. The new institution proclaimed its commitment to modernization by employing numerous lecturers and instructors from Britain, the United States, France, Germany, and other western countries, although their numbers and influence would steadily decline over the decades, as the Japanese whom they had trained became able to take their places.

This first merger of the three schools lasted for only two years, before many of the former Shokeiko's Confucian scholars and facilities were transferred to the new Monbusho, the Ministry of Education, and the other two schools regained ■ measure of autonomy. The law, science, and literature faculties of the Kaisei Gakko occupied various buildings in the Kanda district of the city (it was at one of its departments, incidentally, that baseball was introduced to Japan in 1873, yet another augury of extensive westernization). Meanwhile the Igakko moved to the Hongo district of northeastern Tokyo, along with what is now the university hospital, founded in Kanda in 1868, to occupy part of the Kaga Yashiki, the former estate of the Maeda family, who had been hereditary lords of Kaga Province and whose wealth and power had been second only to that of the Tokugawa shoguns.

At this Hongo site, around one mile from the Imperial Palace, the present University of Tokyo was formally established on April 12, 1877, once again as an amalgamation of the Igakko, the Kaisei Gakko, and parts of the Shoheiko. The hybrid nature of the new institution is still reflected in its very appearance. All the buildings were constructed in the 1870s and later, using a variety of styles imported from Europe and North America; however, some of the formal gardens of the Maeda have been preserved within the university precincts, and one of the main entrances to the campus through the brick wall surrounding it is the Akamon, the Chinese-style Red Gate built for the Maeda in 1827, which has become a symbol of the university.

The former Shoheiko was no longer formally dominant within the university, organized on western lines into four faculties (law, literature, medicine, and science), each containing several departments. Those Confucian scholars who were appointed to teaching posts were no longer concentrated into one school; they offered courses in Chinese and Japanese literature, formed the nucleus of the university's Chinese studies department, set up in 1882, and occupied leading positions in the history department. Even so, the new institution, like its predecessor of 1869–71, was at the center of controversies over how far modernization should or could go before it threatened the integrity of Japanese traditions, and when the enthusiastic westernization of the 1870s gave way to ■ revived nationalism in the late 1880s, the character of the university was to be altered once again.

In 1886 the university was renamed Teikoku Daigaku, the Imperial University, under an imperial ordinance, giving it the twin objectives of training its students in arts and sciences and investigating matters necessary to the state. In the same year it underwent significant expansion by establishing a graduate school and absorbing the previously separate Kobu Daigaku, ■ college of engineering. This school then included among its staff Josiah Conder, who introduced European styles of architecture to Japan and helped to make Japanese traditional painting better known in Britain, his home country; and his compatriot John Milne, who brought the science of seismology to ■ country where it was still widely believed that earthquakes were caused by dragons or giant turtles. The transfer of the government's astronomical observatory to the university in 1888 and the absorption of the Tokyo Norin Gakko, a college of agriculture and forestry, in 1890, appeared to confirm its role as the national center for training across the range of academic disciplines imported from the west.

Meanwhile, however, those Confucianists who had regrouped inside the Education Ministry, notably in its textbook section, gained the attention of the Emperor Mutsuhito (referred to since his death in 1912 as the Meiji emperor), through the regular programs of lecturers at his court given by Motoda Eifu and others. After the emperor had made his first official visit to the university in 1886 he commissioned Motoda to investigate its neglect of traditional subjects such as Japanese literature, Confucian philosophy, and ethics. Crucial changes followed, which formalized the university's role as the national center for training social elites. In 1887 competitive examinations were introduced for civil service posts, tailored to the university's graduates. In 1889 the socially exclusive Dai-ichi Koto Gakko (First Higher School), founded 15 years earlier at the Tokyo School of English, was reestablished on a site to the south of the university, as the main conduit for students seeking to enter it. Finally, in 1890 Motoda and others drafted the Imperial Rescript on Education, the influential document displayed inside the university and all other educational institutions in Japan until 1945, which required that they promote the values of loyalty and filial piety.

Thus what had been envisaged by some of its founders, and its foreign lecturers, as a center for westernization became an integral part of the Japanese state's program for creating loyal subjects rather than active citizens. More concretely, the domination of the civil service by a network of Imperial University graduates, beginning around 1905, further ensured that the nationalist ideas favored by the leading politicians and officials would permeate the state, the university, and indeed, its sister institution, the imperial university which was established in Kyoto in 1897 and which necessitated yet another change of name for the older foundation, which became Tokyo Teikoku Daigaku in that year.

Even so, the university was still not exclusively controlled by traditionalists. On the one hand, scientific and technical subjects, if they were to be at all useful to the state, had to be taught in ways which unavoidably challenged inherited ideas, even if their staff and alumni had less social prestige or influence than those of the humanities departments. On the other hand, those departments also could not be hermetically sealed off from the liberal and even socialist ideas emanating from the west. These ideas were usually ignored by the government so long as they remained academic theories rather than inspirations to political action. In 1910, for example, Minobe Tatsukichi, a professor of political science, was allowed to publish a new interpretation of the 1889 Constitution which treated the emperor as just one of several organs of the state; in 1911 12 leftists, lacking his high social status, were executed on the false charge of planning to assassinate the emperor.

The government at this period also gave relative freedom of action to the literature faculty, which established its own position of enduring influence on Japanese culture, partly by exposing its students not just to foreign books and ideas but to foreign teachers, whom it went on employing into the more repressive 1930s. The best known of these were Basil Hall Chamberlain, the first professor of Japanese, and Lafcadio Hearn, an early professor of English, both of whom wrote extensively about Japan, thus pioneering what has since been formalized as Japanese Studies (and setting examples of independent thinking and readable prose which regrettably few of their academic heirs seem able to follow). As for the early students of the literature faculty, they included Natsume Soseki, often called the father of modern Japanese literature. After being graduated in 1893 and returning to succeed Hearn as professor of English in 1902, he resigned five years later to begin writing novels which are still read today for their evocation of Japan in the late Meiji period, caught in transition between familiar customs and disturbing new ways of life. He is commemorated on the Hongo campus by Sanshiro's Pond (another remnant of the Maeda estate), so named for the eponymous hero of his novel *Sanshiro*, which was partly based on his student years there. Later alumni of the faculty include the novelists Kawabata Yasunari, Inoue Yasushi, Nagai Kafu, Tanizaki Junichiro, and Mishima Yukio, each of whom has made his own distinctive contribution to literature yet has also shown the influence of his training in awareness of both classical Japanese and contemporary foreign literary forms and topics.

Tokyo Imperial University continued its expansion during and after World War I, most notably in 1916, when it absorbed the Institute for Infectious Diseases, along with its attached hospital, both founded in 1894; in 1918, when its Aeronautical Research Institute was established; and in 1919, when a separate faculty of economics was created. However, many of the university's buildings were destroyed by the Great Kanto Earthquake of 1923,

which devastated much of Tokyo and Yokohama; they were replaced by a range of neo-Gothic structures which dominate a large part of the Hongo campus and include the General Library, partly financed by a donation from the Rockefeller Foundation. In addition, from 1925 the center of the Hongo campus was occupied by a new building, the Yasuda Auditorium, which was funded by a donation from the businessman Yasuda Zenjiro. The building has been used ever since for graduation ceremonies and other special events. In the same year the establishment of the Earthquake Research Institute indicated that at last John Milne's work was being taken seriously by the government.

During the early 1930s the uneasy official balance between enthusiasm for westernization and hostility toward it shifted decisively toward hostility, as the Japanese state came more and more under the influence of military leaders and conservative politicians committed to confrontation with the European colonial powers and their ally the United States, especially over the future of China. At home the reassertion of the state ideology, based on the concept of Japan's unique *kokutai* (literally, "national body"), involved increased interference in the education system, and the imperial universities in Tokyo, Kyoto, and elsewhere were all purged of the minority of liberals and Marxists who had been appointed as lecturers in the more tolerant era which had begun before World War I. The removal of Professor Minobe from Tokyo Imperial University, and his dismissal from the House of Nobles (the upper chamber of the Diet), was the best-known case. The fact that he was being punished for ideas expressed in a book published 25 years earlier indicates how thorough the purge was.

The triumph of ultra-nationalism was strikingly celebrated in October 1940, when the Yasuda Auditorium was used for a state celebration both of the 50th anniversary of the Imperial Rescript on Education and of the supposed 2,600th anniversary of the enthronement of the first emperor and the foundation of Japan. In 1941, as the armed forces prepared to launch the Pacific War, the university was required to create an Institute of Oriental Culture (which still exists), then intended to help in assimilating the conquered peoples of East and Southeast Asia to the "Co-Prosperity Sphere" established by Japan. In 1942, somewhat more practically, a temporary Second Faculty of Engineering was established to contribute to military research. Although the university was closed and its students were conscripted into the armed forces and the munitions industry in November 1943, two further institutes were created, with obvious relevance to the Pacific War but little actual effect: the Institute of Research in Natural Sciences of the Tropics, set up in 1944 (but closed in 1947), and the Radiation Chemistry Research Institute, founded in 1945, the year of the first two civilian-targeted atomic bombs and of Japan's unconditional surrender.

Under the Allied Occupation (1945–52) the university, renamed Tokyo Daigaku in 1947, was purged yet again, this time to remove the professors who had collaborated with the militarist regime, and the Aeronautical Research Institute was closed. The latest major reorganization of the university took place between 1947 and 1949, in response to the educational reforms introduced by the Occupation authorities. The former First Higher School and another “feeder” school, the Tokyo Koto Gakko (Tokyo Higher School), were absorbed into the university and reorganized to form its College of General Education, later called the College of Arts and Sciences, the body of which provides teaching for the first two years of the university’s four-year degrees on the First Higher School’s former campus at Komaba. Education and literature were separated into two faculties and the university created five more specialist institutes, those of social sciences, science and technology, physiography, industrial science, and journalism and communication studies. But perhaps the reform with the greatest long-term impact was that the university, like others controlled by the state, was opened to women students for the first time.

This new “democratic” institution retained its predecessors’ prestigious role as the Japanese university most favored by the political and social elites. If anything, its importance increased, for with the abolition of the nobility, the disgrace of the armed forces, and extensive land reforms in the countryside, very few alternative routes to power and influence remained open in a society which gave increasing importance to educational records. Thus, for example, while most prime ministers of Japan before and during World War II were either self-made men of the Meiji period—rural magnates or soldiers—most since 1945 have been Tokyo graduates with experience as lawyers and/or government officials.

Somewhat paradoxically, however, this eminently respectable place was also a breeding ground for Marxists and other radicals (including many prominent members of the Communist Party, legalized after the defeat). Many of its students took part in the riots which erupted in May 1960 in response to the government’s decision to disregard the opposition parties and force the renewed Security Treaty with the United States through the Diet. Eight years later the university became one of the leading centers for the large-scale agitation by student radicals which spread throughout the higher education system. In March 1968 proposals to reform the intern program for medical students sparked off a student strike in every faculty, and in April the graduation ceremony was abandoned, and the student radicals disrupted the formal welcome to new students. In June the police removed the protesters and restored order, but a second occupation of the Yasuda Auditorium began in July, driving administrative staff out of their offices in the building. Eventually squads of riot police were brought in to take control of the campus, on January 18 and 19, 1969, but the damage

to the Auditorium and the continuing demonstrations elsewhere on campus meant that in 1969 the entrance examinations were canceled altogether. The building could not be used until May 1971. In the meantime anti-American demonstrations arranged for Okinawa Day, on April 28, 1969, failed to attract the large numbers which the organizers expected, and in August a new university law was passed, giving the administration extra powers to suppress student protests and impose penalties if they failed to do so. The physical damage is estimated to have cost around 136 million yen (then around \$380,000, U.S. dollars), but the damage to the university’s reputation, though probably severe at the time, did not outlive the protests themselves.

With the distance of time, the student movement of the 1960s appears to have been a minor diversion from the university’s fundamental character, which has changed remarkably little since its foundation. There are now approximately 24,000 students, of whom around one-eighth are women, within its 9 faculties, its graduate school, its 12 specialist institutes, and its medical research facilities. Like their radical predecessors, few of whom failed to conform in the end, most of these students can expect to enter one or other section of what is known in Japan as the *Todaibatsu* (the “Tokyo University faction”), the informal network of alumni in leading positions in government and business. In spite of the high academic and social standing of such rival universities as Kyoto, Keio, or Waseda, and the huge general expansion of higher education since 1947, such alumni still account for approximately one-third of all those entering the leading grades of the civil service and for approximately two out of every five executives in the large corporations which form the decisive sectors of Japan’s dual economy. Within their ranks those who studied in the university’s law faculty are even more prestigious than their fellows, for about one-sixth of its alumni regularly enter central government service, while approximately two-thirds take up posts in private enterprise. These men (and a very small number of women) have contributed, perhaps more than any other single group of Japanese people, to the exceptional stability of the political and economic structures of their country, as well as to the pervasiveness of the highly conformist attitudes acquired during their four years of studying in the faculty, which, in spite of its name, teaches political science and economics as well as legal theory.

It is probably a safe conclusion that if the University of Tokyo had not been created when it was, Japan might have been a very different country. In particular, the adoption of a variety of western ideas and institutions, and their adaptation to the Japanese context—disastrously between the two world wars, with considerable success since 1945—owe much to the work of the university’s teachers, foreign and Japanese alike, and of its alumni, whether in public service, in business, or (not least) in the field of culture. The impact of the *Todaibatsu*

on the development of modern Japan is up to the Japanese people themselves, who are, formally speaking, its owners and clients. If the past 120 years or so are any guide, the university can and will be changed as Japan changes. In this sense perhaps the chief lesson that its alumni have taken away from their years at “Todai” is the importance of adaptability.

Further Reading: W.G. Beasley’s impressive history, *The Rise of Modern Japan* (New York: St. Martin’s Press, 1990; second edition, London: Weidenfeld and Nicolson, 1995), and Edward Seidensticker’s two volumes covering Tokyo

since 1867, *Low City, High City* and *Tokyo Rising* (New York: Knopf, and London: Allen Lane, 1983 and 1990) usefully explain the national and local contexts of the university’s development. More specific aspects of its history are dealt with in *Confucianism in Modern Japan: A Study of Conservatism in Japanese Intellectual History* by Warren W. Smith Jr. (Tokyo: Hokuseido Press, 1959), and *Governing Elites: Studies in Training and Selection*, a collection of essays edited by Rupert Wilkinson (Oxford: Oxford University Press, 1969).

—Patrick Heenan

UNIVERSITY OF TORONTO

(Toronto, Ontario, Canada)

- Location:** On the Saint George campus in the city of Toronto, at Scarborough 21 miles to the east and Erindale 21 miles to the west, with a number of specialist institutes and medical facilities at other sites.
- Description:** The largest university in Canada, a federation of universities and colleges in and around Toronto, with a total of around 39,000 full-time and 18,000 part-time students.
- Information:** The Provost
University of Toronto
Toronto, Ontario M5S 1A1
Canada
(416) 978 2011

The University of Toronto is a unique mixture of universities and colleges that has developed over nearly 170 years, from its beginnings as a college controlled by the Church of England, through decades of conflict as a secular institution rivaling the universities created by the Christian churches of Ontario, to a period of expansion and diversification as a federation including its former rivals. Its teachers and alumni have contributed a great deal to Canada, especially to its politics and literature, during the twentieth century, as the university and the country alike have moved decisively away from their roots in Christian faith and colonial reverence for Britain.

The oldest section of what is now the University of Toronto was established in 1827 at the suggestion of the prominent Anglican priest John Strachan, later to become the first bishop of Toronto. At that time Toronto was already a provincial capital, under the name York, while Ontario was then called Upper Canada. Because the new institution was granted a charter by King William IV, it was named King's College, but because it was the only institution of higher education in the province it was also known as the Provincial University. Strachan was its first president. Its governors and its teachers were required to be members of the Church, although its students were not. The intention was to create a collegiate body, along the lines of the medieval colleges of Oxford and Cambridge, in that part of North America that had remained loyal to the British crown.

The establishment of such an institution at that date, as well as its controversial dependence on public funds, reflected the privileged position of the Church of England

under the colonial constitution imposed by the British in 1791, which had made it the officially established church of Upper Canada and given it one-seventh of all the lands in the province. But its creation was also due to the local influence of what is known as the "Family Compact," a small group of wealthy citizens who then dominated the city's affairs and who favored the established Church of England against other Protestant churches that were associated in their minds with subversive tendencies toward American notions of democracy and republicanism. As the city grew, becoming ethnically and religiously more mixed and being renamed Toronto (in 1834), the influence of this elite was increasingly resented, and in 1837 they were the main target of a brief rebellion led by the city's mayor, William Lyon Mackenzie. The rising failed, but it played some part in influencing the British imperial authorities to enforce a union between Upper and Lower Canada (now Ontario and Quebec) in 1841. In these circumstances it proved impossible to operate the college. Its first students were not admitted until 1843, and it did not award any degrees until the following year.

In the meantime the Wesleyan Methodist Church had established its own rival body, Upper Canada Academy, at Cobourg in 1836. In 1841 it was renamed Victoria College and given the power to grant degrees. In 1850 it was designated a university, in 1854 it took over the Toronto School of Medicine, and in 1860 it created a law faculty. Despite the addition of faculties, theology remained the university's principal discipline, having been taught from the outset in a seminary for the training of the church's ministers. This seminary was to be renamed Emmanuel College and separated from Victoria University in 1925, the same year that the Wesleyan Methodists joined the United Church of Canada.

Controversy over providing public money raised from taxpayers of all denominations to King's College, a sectarian body, had helped to delay the college's opening, and debate broke out again after the union of Upper and Lower Canada, for the parliament of the united colony, based in Montreal, had a majority of non-Anglicans, principally the French-speaking Catholics of Quebec. In 1849 the parliament voted to sever the college's connection with the Church, so that from 1850 the college became a secular institution, the University of Toronto, and its faculty of divinity was closed. (Because of this important change in character and name many reference books give the date of foundation as 1849 or 1850 rather than 1827.)

The newly secularized university was intended by Robert Baldwin, the premier who had originated the change, to become a federation of Ontario colleges. How-

ever, precisely because it lacked religious tests for either staff or students, a then-radical feature which, among all the universities of the British empire, it shared only with the University of London, the churches rejected any association with it. Instead, in 1851 Bishop Strachan, who had given up the presidency of King's in 1848, created a new establishment to be owned and operated by the Church of England, the University of Trinity College, which had an almost entirely British faculty and was enthusiastically supported by the Tory (conservative) elements in the city. In 1852 Bishop Charbonnel of Toronto, head of the Catholic Church in Upper Canada, established the University of Saint Michael's College, operated by the order of the Basilian Fathers.

In 1853 the University of Toronto was reorganized along the lines of the University of London, which had been established in 1836 as an examining body serving a group of colleges. The Provincial College, as the teaching faculties were renamed once the medical and law faculties had been closed, was to be the only college in this system for more than 30 years, because the religious institutions still declined the implied invitation to join.

At first both the university's officials and examiners and the Provincial College's teachers and students carried on sharing the use of the original site of King's College, some distance from the center of the city, a position which probably enhanced the mutual suspicion between the conservative middle classes of Toronto and the allegedly radical teachers at the university. But in 1859 both institutions moved into a new Romanesque building on the 160-acre Saint George's campus, near the provincial parliament building in central Toronto; the area has been at the heart of the university's activities ever since.

With the creation of the Canadian federation under the British North America Act of 1867 the former Upper Canada had been reestablished as the province of Ontario and from then onward the provincial parliament, once again based in Toronto, had refused to make any further grants of aid to the three church-owned colleges, which therefore faced increasing financial difficulties. In 1881 the Catholic University of Saint Michael's College accepted a form of affiliation with the University of Toronto. This action gave it access to public funds but preserved its academic independence; however, the other churches still resisted compromise with what they saw as a "godless" institution.

In spite of such persistent hostility the provincial university steadily extended its influence and made itself part of the life of Ontario. In 1878 a new affiliate, the School of Practical Science, was opened to provide advanced training in engineering, and in 1884 the provincial parliament forced the Provincial College, against the wishes of its President, Sir Daniel Wilson, to admit women students on equal terms with men, one year after Victoria University had become the first institution in Ontario to award a degree to a woman. In the same year the chancellor of the

University of Toronto was able to boast that 51 of the 94 principals of secondary schools had been graduates of the university, trained in the province, and 73 of the 98 assistant principals had been educated at the university. Serious discussions started, also in 1884, on some form of federation among the various colleges and universities; they culminated in 1887 in the passage of the Federation Act by the provincial parliament, providing for a federal University of Toronto which would have supervisory and examining powers over whichever colleges elected to join it.

As a result, the Provincial College was renamed University College, and its medical and law faculties were reestablished, but the process of federation envisaged by the politicians was not so rapid as they expected. The first new members of the university, besides University College itself, were the Royal College of Dental Surgeons, established in 1875, which joined in 1888, and two small theological colleges, the Church of England's Wycliffe College, founded in 1877, and the Presbyterian Church's Knox College, established in 1844, which joined in 1889 and 1890 respectively. It was also in 1890 that the Wesleyan Methodist Victoria University joined the federation, moving from Cobourg to the Saint George's campus two years later. By 1891 the university was examining around 1,500 candidates a year. The Royal Conservatory of Music, which had been established in 1886, affiliated in 1896, and, finally, the Anglican University of Trinity College completed the federation in 1904. (Two prominent Ontario universities have never joined the federation: Queen's University at Kingston, founded by the Presbyterian Church in 1842, and McMaster University, which was founded in 1887 in Toronto but moved to Hamilton in 1927.)

In 1905 a center for part-time students was established on the Saint George's campus as the first stage in what was to become a major aspect of the university's teaching. From 1920 this center was the headquarters of the extension department, providing a range of courses for part-time students, some of whom took the university degree. In 1974 the department was divided into a school of continuing studies for noncredit courses and a separate school for part-time degree students, Woodsworth College. Part-time students now account for around 30 percent of the total student body, a proportion which is among the highest in Canada and significantly higher than the numbers in most universities in North America and western Europe.

Under the University of Toronto Act of 1906, the federation was formally reconstituted to regulate its relations with the provincial authorities and to take account of the informal division of labor which had developed among its constituent parts. Its finances were to be managed by a board of governors appointed by the provincial government but its academic affairs were to be conducted by a senate representing all of the affiliates, a system of joint control intended to remove the university's business from

party political controversy. From 1910 Victoria, Saint Michael's, and Trinity were restricted to providing courses leading to theology degrees, which were to be granted by the universities themselves (which is why they have retained the designation "university"), alongside courses in classics, modern languages, Near Eastern studies, and ancient history, leading to degrees awarded by the University of Toronto. Knox and Wycliffe Colleges remained exclusively theological colleges serving the churches that had founded them, while University College and the extension department offered courses across the whole academic range, leading to University of Toronto degrees and certificates.

The secular affiliates had always been much larger than the religious ones in terms of student numbers, and under the leadership of Sir Robert Falconer, president from 1907 to 1932, they seized the opportunity to expand further. Faculties of home economics, education, forestry, social work, nursing, and hygiene were established on Saint George's campus between 1906 and 1926, and graduate studies were given a new emphasis, with increased provincial funding and a separate school opened in 1922. In addition the university acquired and helped to develop three notable non-teaching affiliates. The first of these, the University of Toronto Press, was established in 1901, expanded in 1911, and refounded as a commercial publishing company in 1945. It publishes learned journals, including the *University of Toronto Quarterly* (since 1931), academic books, and, perhaps most famously, the monumental *Dictionary of Canadian Biography*. Another affiliate, the Royal Ontario Museum, established in Toronto in 1914, has since built up some of Canada's largest and most important collections in Oriental art, natural history, and other fields.

In 1921 came the opening of a third affiliate, Hart House, a center for extracurricular activities which is one of the parts of the university best known to the Canadian public. Its construction on the Saint George's campus and many of its early activities in sport and the arts were financed by the Massey Foundation and the building, like the foundation, commemorates the manufacturing magnate Hart Massey, but its establishment was due to his son Vincent Massey. He had been a lecturer in modern history at the university from 1913 to 1915 and was later to become chancellor of the university (from 1947) and the first Canadian citizen to serve as governor-general of Canada (from 1952 to 1959). Hart House's collection of Canadian paintings, including many works by the Toronto-based Group of Seven, has become one of the largest in the country, while the string quartet, orchestra, and theater company which bear its name have achieved independent reputations.

While the press and Hart House have somewhat specialized reputations within their fields of activity, and most visitors to the museum are unaware of its connection with the university, one event which took place in

Toronto in 1921 has probably done more than anything else to make the University of Toronto famous. This was the discovery and first manufacture of insulin, the hormone which regulates blood sugar levels, by Doctor Frederick Banting, a Toronto alumnus who had in fact started his research at the University of Western Ontario, and Charles H. Best, one of his students at Toronto. Their achievement has since immeasurably improved and extended the lives of people with diabetes mellitus (who are deficient in natural insulin). In 1923 Banting and John Macleod, the chairman of the physiology department, were awarded the Nobel Prize for physiology or medicine: Banting shared his prize money with Best. Banting and Best are now commemorated by a department of medical research named for them, which opened in 1930 with Banting as its first director; by two graduate institutes named for each of them during the 1960s; and, indirectly, by the continuing manufacture of insulin at the university's Connaught Laboratories.

After some disruption of its activities during World War II, as many of its teachers and students departed Toronto for civil service posts or military service, the university entered the 1950s as the largest and one of the most academically prestigious universities in Canada, alongside McGill in Montreal, Queen's in Kingston and the newer but rapidly growing universities of the western provinces. With the support of the provincial parliament as well as increasing research funds and other financial aid from the Canadian federal government it was able to begin a new phase of expansion. In 1958 it established an Institute of Business Administration, a graduate school which rapidly gained an international reputation; in 1959 York University was founded as an affiliate of the university, although it became a separate institution, awarding its own degrees, in 1965.

Greater changes came during the 1960s, as the secular university increased its student numbers and expanded its range of academic and residential provision by creating five more "constituent" colleges, in addition to University College and the extension department. New College, established in 1962, has built up a reputation of its own by specializing in Canadian literature and, more recently, in women's studies and in interdisciplinary courses, while Massey College, an all-graduate body opened in 1963, had as its founding master the distinguished Canadian novelist Robertson Davies, who also taught in the university's English faculty and its drama center up to his retirement from the university in 1981. The remaining three colleges were all established in 1964 and opened to students in 1965 and 1966: Innis College, near the main campus in Toronto, Erindale College, located in Mississauga nearby, and Scarborough College in the city of that name, 21 miles from the provincial capital.

During the 1960s two alumni of Toronto achieved prominence in Canadian life, one at the end of his career, the other at the beginning of hers. National politics came

to be dominated by Lester B. Pearson, who, like Vincent Massey, had once lectured in history at the university (between 1924 and 1928) and had gone on to distinguish himself both in the diplomatic service and in the Liberal Party. Unlike Massey, whose career led him into ceremonial posts, Pearson went on to win the Nobel Peace Prize in 1957, specifically for his contribution to resolving the crisis over the Suez Canal but more generally for developing the concept of United Nations peacekeeping forces. In 1963 he became prime minister of Canada, retiring in 1968 after helping to initiate the major social and constitutional reforms which have come to be associated with his successor Pierre Trudeau. Meanwhile, during the same decade of national resurgence the novelist and poet Margaret Atwood, having graduated from Victoria University in 1961, published the first of her many books, among which *The Handmaid's Tale* is perhaps the best known.

The federal arrangements within the University of Toronto have continued to develop, becoming, if anything, even more complex. In 1969 seven theological colleges in Toronto, including, within the university federation, Knox, Wycliffe, Emmanuel, and the divinity faculties of Saint Michael's and Trinity, came together to form the Toronto School of Theology, which since 1979 has also included the university's most recent affiliate, the Jesuits' Regis College. In 1971 the board of governors and the senate were replaced by a single governing council. In 1973 the university opened the John P. Robarts Research Library, which serves as the central research and reference library in the humanities and social sciences for all the universities and colleges in Ontario. It is also the largest among the 49 sections of the university's own library system which, with total holdings of more than 7 million

volumes, is the largest academic library anywhere in Canada. Finally (for now), since 1978 degrees in divinity have been awarded jointly by Victoria, Saint Michael's, or Trinity with the federal university, putting the seal on a cooperative relationship which the founders of the respective universities can hardly have imagined.

With its three federated universities, its four federated theological colleges, its six constituent colleges, and its numerous other affiliates—including, besides those already mentioned, 11 teaching hospitals, the Pontifical Institute of Medieval Studies, the David Dunlap Observatory at Richmond Hill, Ontario, and even a 20,000-acre university forest—the University of Toronto is one of the leading academic institutions in North America. Few of its students, now numbering more than 56,000 (including nearly 11,000 postgraduates), can have seen, let alone used, all of its facilities, which represent, in their bewildering variety, the accumulated legacy of nearly 60 years of sectarian and political controversy followed by more than a century of continuous growth, in response to the developing needs and wishes of Toronto, Ontario, and Canada.

Further Reading: *A History of the University of Toronto 1827–1927*, by W.S. Wallace (Toronto: University of Toronto Press, 1927) is still obtainable from larger libraries; Frederick H. Armstrong's *Toronto: The Place of Meeting* (Windsor, Ontario: Windsor Publications, 1983) is an impressive history of the city which places the development of the city's institutions of higher education in its local context.

—Monique Lamontagne

UNIVERSITY OF VALENCIA

(Valencia, Spain)

Location:	On three campuses in Valencia, a port city in eastern Spain.
Description:	A state university enrolling approximately 60,000 students in undergraduate, graduate, and professional studies.
Information:	International Affairs Unit University of Valencia C/Nave 2 bojo 46003 Valencia Spain 3864180

Plans for building a university in Valencia began in the thirteenth century, when the province was still a medieval kingdom. After capturing Spain from the Muslims in 1245, King James I, "the Conqueror," gave his consent, along with the pope, for the building of an *estudio*, or college, in the city. But the school, a municipal rather than royal foundation, never materialized; in 1374 city officials hired a teacher only to have him excommunicated by the bishop, who claimed that he presented unfair competition. Soon, however, freedom of education had been decreed, and state institutions sprang up throughout the area. Schools, unified by Vicente Ferrer and regulated by the 1412 constitutions, taught grammar, logic, and philosophy; in 1462, a surgery school was also opened, spurring progress in medical education in the region.

In the late fifteenth century, the magistrates of the city advanced the idea of building a university, or *estudi general*, that would incorporate the various schools as one institution. By 1499 statutes were drawn up and several buildings acquired. Pere Compte, the most famous Valencian architect of the day, was hired to convert the buildings into a suitable structure. In 1500 Pope Alexander VI, himself a Valencian, granted the university the necessary bull; two years later, King Ferdinand, "the Catholic," gave his approval as well.

The founding of the University of Valencia was part of a wider revolution in European education that emerged at the beginning of the sixteenth century. Political, religious, and social changes, shifts in demographics, and technological advances, such as the development of the printing press, all fueled the explosion in higher education; throughout Europe the number of universities, and university students, burgeoned. Spain created particularly vibrant cultural institutions, most of them supported by

the intellectualism of the church; so great, in fact, were Spain's contributions to theology, philosophy, law, and art that the sixteenth and early seventeenth centuries have become known as the country's "golden century."

Because of Valencia's strong municipal interest in developing its university, and the university's links to other educational centers throughout Europe, it flourished throughout the sixteenth century, becoming competitive even with the great Castilian universities of Salamanca and Alcala. In fact, in areas such as medicine, the university even surpassed them, providing, in the eighteenth century, the first real break from the traditional Castilian emphasis on legal studies. By 1690 Valencia was the intellectual center of Spain; its university, situated in a port city with all the attendant cosmopolitan influences, was better exposed to modern scientific thought than most Spanish institutions. Foreign influences from the University of Montpellier, just over the French border, and from scientists in Italy were also important. Well known for its medical curriculum, the university was also respected for its studies in Latin and in the arts, though in theology, law, and canonical studies it was inferior.

In the mid-seventeenth century, the university's paraimf, or academic theater, was built. Used at first for academic debates, staff meetings, and public events, it was later used to stage plays, most notably the comedies of Roman dramatists Plautus and Terence, which were performed in their original language. Ornate and grandly proportioned, the trapezoidal ground floor is surrounded by a projecting gallery and wide vault decorated with trompe l'oeil mouldings. Dominating it is a 1660 painting by Jeronimo Jacinto Espinosa depicting the Immaculate Conception over an idealized scene of Valencia.

Though the University of Valencia had become a leader in education, it was to fall prey to the same cultural and economic forces that, starting in the early 1600s, were pushing the rest of the country's universities into precipitous decline. Institutions throughout Spain lost substantial numbers of students, and the quality of education eroded. Having been a cultural leader in Europe, Spain increasingly found itself out of step with a more secular outside world.

Spain's universities, which like the rest of the society were steeped in tradition and, in particular, Roman Catholicism, and still practiced medieval scholasticism, favoring verbose, theoretical arguments over scientific exploration. According to the historian Ballesteros, Spanish theology students still theorized about what language the angels spoke and of what materials the heavens consisted; texts were outdated and good maps were nonexistent. Many stu-



University of Valencia

dents were convinced that higher mathematics was a hoax and that the works of major European philosophers and scientists were meaningless. University degrees increasingly became merely a means to confer status and taught students little of practical value. The ideological constraints of the Inquisition also were stifling. During this period philosopher and humanist Juan Luis Vives, a member of the faculty at Valencia, went into exile.

In 1707 the Bourbons established rule in Spain, and Philip V severed Valencia's connection with Aragon, suspending the autonomy of the province and imposing Castilian law. Anti-French attitudes in the city were reinforced by the new regime, forcing it to centralize control of the area to a greater degree than originally planned. Nevertheless, a general upturn in Spain's economy benefited the region: trade increased, the population stabilized, and Valencia itself, the fourth largest city in the country, remained an important cultural center on the eastern coast. In 1717 Philip V instituted curricular and other reforms in universities throughout the country; in 1720, he conferred official university status upon Valencia.

But more important to the university than political reforms was the Spanish Enlightenment, which, though far more muted than the movement in Europe, introduced scientific thought and processes to university life. For the first time in decades, higher education began to show signs of vigor. Along with the University of Oviedo, the University of Valencia became a center of Enlightenment thought, due in part to the presence of two esteemed scholars. Andres [or Jose Antonio] Piquer, a professor of medicine and philosophy at the university, introduced modern physics to Spain and helped reform medical studies. Gregoria Mayans y Siscar was the country's first great modern polymath. Together their works promoted new ideas about medicine, jurisprudence, and ecclesiastical reform that were influential outside the province as well as within the university itself.

Such progressive thought attracted controversy, however. Piquer, writing in 1771, outlined the ideological battle raging in Spain and addressed the conservative attacks that he and other reformist thinkers increasingly were facing:

There reign among us two equally concerned factions. One cries against our nation in favor of foreign lands, praising highly the flourishing of the arts and sciences, politics and the enlightenment of the understanding in them. Others abhor whatever comes from without and reject it merely for being foreign. The concern of both factions is equal, but in number, activity and power the first prevails.

Because of Piquer, Mayans, and other university scholars such as Francisco Perez Bayer, the study of law, medicine, and the humanities assumed greater importance at the university. But while progress was being made in some areas, it was resisted in others: the religious reformation occurring elsewhere in Europe was firmly rejected by Spanish universities, and the study of theology at Valencia remained deeply conservative.

Indeed, religion was the central force behind academic life at the university. The chapel, or Capella de la Sapiencia, had, since its erection in 1498, been the site of *sabatines*, or academic discussions between professors and students, and was the center of religious and cultural events, including the conferring of degrees. In 1736 the chapel was reconstructed in classic Baroque style; the new structure featured a single nave with an oval dome at the front and a high chancel at back. In 1780 the chapel was redecorated and Valencia's leading painters, including Jose and Manuel Camaron, Luis Planes, and Jose Vergara, were commissioned to provide artwork for it. When the university building was bombed by Napoléon's troops in 1808 the ensuing fire destroyed the library but left the chapel and academic theater intact. Work to restore the building continued throughout the nineteenth century.

With the Enlightenment and advent of the French revolution, the modern sciences of economics and political theory took on new meaning at Spanish universities, and those changes combined with legislative reforms of Philip V, Fernando VI, and Carlos III resulted in the emergence of a more modern university structure. In 1836 the religious content of university studies was reduced, shifting the focus to the liberal arts. But at Valencia and elsewhere, reform also meant the loss of economic and institutional autonomy. A new law in 1842 gave the government greater control over universities and centralized educational finance. The trend toward government control continued with the creation of a new ministry of education. The building of the Universidad Central in Madrid was meant to provide a model for the University of Valencia and other schools undergoing expansion. Political and ecclesiastical reform had other, perhaps unintended, benefits for Valencia: its library was enriched by a collection of books from the San Miguel de los Reyes Monastery, when it was secularized in 1836. A museum of natural history was also created at the university, but it was destroyed by fire in 1931.

The construction of the *Claustre Major* (the Cloister) began at the university in 1840. Designed by Timoteo Calvo as a striking two-story trapezoid and completed by Joaquin Martinez, Sebastian Monleon, and Javier Goerlich, the Cloister commemorates important individuals in the university's history. It features a statue of Luis Vives, portraits of Vincente Blasco and San Vicente Ferrer, and wall medallions picturing the school's founders. Work on the Cloister continued until 1960, when the extension of Patriarca Square and the construction of a fountain was completed. As time passed various faculties began to move from this central building to nearby sites, leaving the university's historic headquarters. Today the original university building houses the rectorate, a museum, a library, and administrative and cultural services.

The Spanish civil war divided the country's universities into two opposing camps; Valencia joined Barcelona, Madrid, and Murcia under the Republican flag, while Salamanca, Seville, and the others fell under Nationalist control. The city of Valencia was bombed frequently, and after the war was so associated with the Republican cause it continued to suffer politically for years.

In 1939 General Francisco Franco ordered that universities again be governed by both church and state and that religious education once more become an important force in academic life. Student syndicates operated by the Falange, a Fascist political movement begun in 1933 and exploited by Franco, existed on all campuses, and exerted control over both students and faculty, many of whom knew that membership was the key to political advancement. After 1956, however, students were instrumental in the anti-Franco opposition; their protests resulted in the cancellation of the school year in 1965. A new law gave universities freedom from political control in 1970, but student agitation for easier entrance into universities led to riots in early 1987.

Today, under a democratic national government, the University of Valencia is attempting to modernize. In the 1980s, in order to cope with an increasing number of students, it reorganized its academic departments. It now employs approximately 2,300 faculty and staff members in 75 departments covering the social sciences, biomedicine, and the humanities, and, after the University of Barcelona and the Complutense of Madrid, is the country's third largest university.

The university is now divided into three campuses: the Campus de Burjassot; the Campus de Blasco Ibanez; and the Campus de la Avenida dels Tarongers, each of which houses a different concentration of studies. Though many of the university's buildings are modern, considerable energy is devoted to maintaining its historical structures. In 1985 restoration work on the chapel was begun. It reopened in 1990 and once again hosts both cultural and religious events. The Paraninfo was also restored in 1985, and provides a venue for formal events such as the opening of the academic year.

The central library's Codex Room houses the university's many historical art works: among them are a 1546 map drawn by Majoring Jacobus Russus; a celestial sphere and terrestrial globe crafted in Holland in the seventeenth century; a silver Renaissance chalice that belonged to Pope Alexander VI; and the Valencian voluntary service flag representing students who fought in the defense of Zaragoza in 1808. The room also contains books illustrated in Italy by early Renaissance artists for King Alfonso V, "the Magnanimous."

Further Reading: Both the *Historical Dictionary of Modern Spain 1700–1988* (New York: Greenwood, 1990) and Stanley G. Payne's *A History of Spain and Portugal* (Madison: University of Wisconsin Press, 1973) are excellent sources of information about the formation and evolution of Spanish universities.

—Melanie Wilson

UNIVERSITY OF VIENNA

(Vienna, Austria)

Location:	On the western edge of the old section of Vienna, in the concourse with the parliament buildings.
Description:	A public university enrolling approximately 85,000 students in undergraduate and graduate schools.
Information:	Administrative Office University of Vienna Dr. Karl Lueger Ring 1 A-1010 Vienna Austria (222) 431 40103

As the oldest university in the German-speaking countries of Europe, the University of Vienna is steeped in the history of Europe, dating back to its founding in 1365 by Duke Rudolf IV and his two brothers, the Archduke Albrecht III and Leopold III.

Created as an act of national policy, the University of Vienna and the universities of Prague, Cracow, and Heidelberg were intended to be centers for the intelligentsia and to entice scholars, thereby strengthening kingdoms whose histories bore the ravages of war.

During this era, Europe saw the powerful religious resurgence that led to the creation of Protestantism. This period of reformation found authorities in many cities expropriating ecclesiastical revenues used to financially support clerics at universities.

Confirmed by papal bull, the university was established as an autonomous institution. Allocated meager financial provisions by its founders, it was without a faculty of theology until 1384, at which time Albrecht III arranged for the inclusion of a theological department, a measure that gave the school full university status.

The university's founders took their administrative practices from the University of Paris and as such grouped teachers into faculties or departments and grouped students according to nations.

Student population rose once the faculty of theology was established, with enrollment numbers increasing rapidly. In 1390, some 350 students were enrolled at the University of Vienna, a number that doubled 20 years later. During this period, the university enrolled the majority of young male scholars from throughout the Holy Roman Empire. Increased enrollments also paved the way for prestigious professors to teach at the Viennese institution.

By the fifteenth century, the university's school of mathematics and astronomy boasted on its staff Regiomontanus, also known as Johann Muller, who published the first printed calendar and developed modern trigonometry, among his other accomplishments.

The period between the late fifteenth and early sixteenth centuries found the university becoming one of the most recognized in Europe. As such, it attracted celebrated scholars, including humanist Conrad Celtis and physician/poet Johannes Cuspinian. But the days of academic prosperity came to an abrupt halt when, in the early sixteenth century, all European institutions of higher learning suffered through the upheaval of the Reformation.

Additionally, growing theological differences reduced the student population at many learned institutions, including the University of Vienna. Moreover, financial deficits found some professors going without payment for their services, a predicament that led to the near extinction of the faculties of law and theology at the University of Vienna.

Not only did enrollment at the European universities decline, but the intellectual advances that had been made during the beginning of the Middle Ages were lost in large degree during the waning years of that period. Life in northern Europe during the sixteenth century was predicated on the notion that man was sinful and ruled by a capricious God. Centers of learning endured during this era of religious, social, and economic turbulence, however, and by 1554, Austrian ruler Ferdinand I and his imperial government opted to maintain the University of Vienna. That decision prompted financial support, larger endowments, and the hiring of several noted Jesuit scholars, whose control of the university's faculty of theology was complete by 1558. Jesuit dominance in both the faculties of theology and philosophy continued for nearly two centuries following the Reformation.

One price for Ferdinand I's support was increasing state control of the university; by the 1700s, the institution was completely state-directed due to educational reforms made in the eighteenth century by the Empress Maria Theresa, Emperor Joseph II, and Emperor Leopold II. The university's prior autonomy was lost and the school formerly recognized for its theological studies showed small progress, save for some advancements in the faculties of law and medicine. Among those developments was the construction in 1784 of the *Allgemeine Krankenhaus*, the largest and most up-to-date clinic in the world at that time.

While some attempts to change the existing formal curriculum were made during the 1830s, not until "the year of revolution," 1848, did those reforms actually occur. Triggered by the crop failures of 1846 and a subsequent eco-



University of Vienna

nomic depression, the revolutions of 1848 began in Paris, where a working-class insurrection was overpowered, and a national assembly controlled by the middle class and headed by a democratically elected legislature and executive body was established. After the Paris uprisings, similar demonstrations were played out in Vienna, resulting in conservative minister Klemens von Metternich's departure from office. The university had been at the heart of the uprisings in Vienna, a fact that the imperial army, which had been bested by the demonstrators, would not forgive or forget. The army occupied the university's quarters in the center of the city and forced the university to occupy scattered sites around the city.

The stage was then set for the 1849–51 reforms at the University of Vienna, changes that were effected by Minister of Education, Count Leo Thun-Hohenstein. With a portion of its original autonomy restored, the university asserted the long-thwarted objective of establishing freedom in its teaching and research facilities. Count Thun-

Hohenstein's one attempt to redesign the structure of the university came in 1849 when he tried to remove the school from the shadow of the Viennese Revolution of 1848 and restore it to sovereignty, but with strong ties to both church and state. Between 1853 and 1868, Thun-Hohenstein and his supporters tried in vain to create a new English- and Gothic-style university area in the city as a way of equating the university with the Vienna of centuries past, but the institution did not receive a new face and high place of honor on its boulevard until 1868 when a liberal-minded Vienna City Council, interested in the advancement of education, supported the concept of a new building plan for the university.

The neo-Italian Renaissance style of the university was chosen to illustrate the school's historical link between modern culture and the resurgence of secular learning in the Renaissance. To the liberals in power, the building also served as a symbol of the demise of what they perceived to be a protracted era of medieval ideology. Archi-

tect Heinrich Ferstel was commissioned to design the "new" university, an assignment that took him to Italy and the universities of Padua, Genoa, Bologna, and Rome, where he studied the design inherent in a country epitomizing the Renaissance.

The university's location in Vienna's Ringstrasse (Ring Street) places it in the heart of the city, situated within an expansive, circular area where it shares the spacious concourse with, among other structures, the Parliament building, the city park, and the Burgtheater. The "ring street" affords its occupants independence from one another, as trees running along its entire length create a sense of separation of one building from the next, a perception that is further heightened by the architectural differences of the Ringstrasse buildings.

Architectural modification was just one aspect of the reshaping of the university that came about during the latter portion of the nineteenth century. In 1873, the post of chancellor that had previously been the highest-ranking position was reduced to chancellor of the theological faculty. The school's original constitution was further dissolved when, in the same year, the faculties or departments were designated as individual teaching bodies. But that dissolution was the impetus for continued reorganization of the university's system, with a new building program activated to house the increasing number of departments. Another change came when women were allowed entry into the University of Vienna in 1897; however, they were confined to studies in the faculty of philosophy. Both genders were accepted to the faculty of medicine in 1900 and to the faculty of law in 1920.

The next decade brought war, and with it came serious ramifications for the faculty of medicine, then containing a group of leading researchers. In 1938, when Germany annexed Austria, more than 75 percent of the department's professors were forced to resign for political or ethnic reasons. While the political and fiscal turmoil that followed World War II had adverse effects on all European universities, the University of Vienna was again opened by May 29, 1945, and some nine years later its reorganization was complete. The 1960s brought a broadening of student enrollment, an increase that has been perennial, bringing present student counts to approximately 85,000, representing 121 countries.

Recent curriculum changes have affected several university faculties. The past two decades have resulted in major additions to the Protestant theology course study. Currently, course study includes canon law, Christian archaeology, and biblical art, in addition to the more traditional subjects of Old and New Testament studies and church history. In addition to religious course study, six other departments comprise the university.

The faculty of law, one of the original departments created when the university was founded, currently enrolls more than 10,000 students, a figure that represents some

46 percent of all Austrian law students. Divided into 13 departments, the faculty of law centers its study around civil, penal, constitutional, and administrative law. Research focuses not only on Austrian statutes but also on international and comparative law.

The faculty of social studies and economics, created in 1976 and once called the faculty of law and political science, enrolls 6,100 students. Courses within the department include sociology, statistics, public sector management, quantitative economics, and international business. The five departments within the faculty of social studies and economics uphold ties with institutions with similar curricula in the United States, the United Kingdom, Hungary, France, Germany, and the former Czech and Slovak Federal Republic.

The university has had a major impact on the international economic scene. Eugen Bohm-Bawerk (who three times served as Austria's minister of finance) and Friedrich von Weiser developed the Austrian theory of capital—based on the concept of final utility; the philosophy was to be important in several countries. Joseph Schumpeter, who was instrumental in bringing Austrian economic theories to the United States, became a professor at Harvard University in 1932 and served for nearly 30 years. His influential work, *Business Cycles*, was published in 1939.

The present university is a publicly maintained center of higher learning, with enrollment open to anyone who has obtained an Austrian school-leaving certificate or the equivalent. The academic head is the rector, who is elected for two years and is charged with making all significant decisions in joint collaboration with representatives of the university's faculties.

Recently celebrating its 630th anniversary, the University of Vienna, which embraces the motto "In Quest of Knowledge," can lay claim to having educated more than 1 million students since its beginnings in the fourteenth century. Luminaries of the scientific, political, and entertainment worlds are among those receiving degrees from this largest university in Austria. Among notable graduates are Sir Rudolf Bing, the former general manager and artistic director of the Metropolitan Opera, and Theodor Herzl, the founder of modern Zionism. Kurt Waldheim, president of Austria from 1986 to 1992, was graduated from the school's faculty of law.

Further Reading: A book that provides information about the university in the context of its city is *Fin-de-Siècle Vienna*, by Carl E. Schorske (New York: Knopf, 1980). Another source of information is *The Universities of Europe, 1100–1914*, by Willis Rudy (Madison, New Jersey: Fairleigh Dickinson University Press, 1984).

—Sharon Nery

UNIVERSITY OF VIRGINIA (Charlottesville, Virginia, U.S.A.)

Location:	Charlottesville, Virginia, 120 miles southwest of Washington, D.C.
Description:	A state university enrolling approximately 18,000 students in undergraduate, graduate, and professional schools.
Information:	Office of Admission Box 9017 Charlottesville, VA 22906 U.S.A. (804) 982-3200
Visiting:	Guided tours of the Rotunda and the Lawn are available year-round. For more information, call the phone number above.

Although he had held such prestigious posts as governor of Virginia, secretary of state, and president of the United States, Thomas Jefferson ordered that his epitaph identify him as the author of the Declaration of American Independence and the statute of Virginia for religious freedom, and as father of the University of Virginia. Jefferson achieved this final goal at the end of his life, despite problems both physical and financial. He personally supervised every phase of the founding of the university from the physical design to the curriculum to the hiring of professors.

As early as 1800 Jefferson began corresponding with various learned friends about the design of a university, his dream being a state university for Virginia, in addition to the College of William and Mary. The “ancestor” of the University of Virginia was Albemarle Academy, which had existed on paper since the beginning of the nineteenth century. After Jefferson was appointed to its board of trustees in 1814, he recommended its transformation into an institution of higher learning, Central College.

Jefferson himself wrote the petition to the general assembly seeking a charter. In soliciting legislative support for his institution, Jefferson wrote to Colonel Charles Yancy that he envisioned “a university where might be taught, in its highest degree, every branch of science [knowledge] useful in our time and country.” He continued, explaining his belief in mass education: “If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and what never will be.”

The body approved the creation of Central College on February 6, 1816, and in October, a board of visitors [trustees] was established, including not only Jefferson but President James Monroe and former president James Madison. The cornerstone for the first building (designed by Jefferson), Pavilion VII, was laid in 1817, with Jefferson, Madison, and Monroe in attendance. When the legislature approved plans for a state university in January 1818, it created a 24-member commission to plan the institution. Conscious of his failing health but passionate in his desire to oversee his project personally, Jefferson pressed for the university to be located at Charlottesville, a short distance from his Monticello home, arguing that Central College was already in existence there and available to be transformed into the new state university. When the commission voted, the Charlottesville site won handily. In March 1819, the board of visitors elected Jefferson rector of the university.

In his architectural plans for the university, Jefferson fused the practical and the artistic, adapting his European models to suit the American landscape. Architectural historian William H. Pierson Jr., described Jefferson’s achievement:

Thoroughly anti-British in his attitude toward architecture, and consciously seeking a mode of building symbolic of the new republic, he discovered what he considered an appropriate idiom in two non-English sources, the Neoclassical architecture of contemporary France, and the architecture of ancient Rome. From these he created an intensely personal style. . . . Rational at the same time that it was romantic, it remains one of the most brilliant creative outbursts of the entire Neoclassical movement.

The buildings designed by Jefferson—his “academical village”—remain the centerpiece of the university. The focus is the Lawn, a rectangular, terraced green flanked on each side by two rows of dormitories connected by colonnades, with ten pavilions for the professors spaced at intervals. At the center of the north side is the Rotunda, a sphere within a cylinder, 70 feet in diameter, half that of its prototype, the Pantheon in Rome. The Rotunda housed the library, lecture room, and other facilities, including a gymnasium and America’s first planetarium. In keeping with Jefferson’s desire to stress the intellectual aspects of education, the university’s central building was a library, not a chapel.

Pierson finds Jefferson’s campus especially American in that it is spacious and open. The living quarters on the



University of Virginia

central lawn and the ranges (also dormitories) behind them face outward, not inward. However, Jefferson also recognized the need for contemplation in seclusion. Thus, behind the dormitories and pavilions are walled gardens, enclosed by serpentine walls. In Jefferson's original designs, the pavilions were all alike, but after a meeting of the board of visitors, he wrote a friend that the pavilions should be "models of taste and good architecture, and of a variety of appearance, no two alike, so as to serve as specimens for the Architectural lecturer." Unique to Jefferson's design was the integration of living space for faculty and students with classrooms and libraries. Students lived on the Lawn and in two outer rows of rooms called the Ranges, while faculty were housed in the pavilions. The Rotunda held classroom space and the library.

Jefferson did not confine himself to designing the buildings of the university. He had strong views on curriculum and governance as well. He rejected both European and American models for "his" university. The European universities were ridden by "kingcraft" and the American ones by "priestcraft." Accordingly, students at the University of Virginia were free to pursue any discipline other than theology. Thus, in the early years, no clergyman was appointed to the faculty. In 1845 ■ Presbyterian minister, Reverend William Holmes McGuffey (who gained fame for his series of readers for children) joined the faculty as a professor of moral philosophy.

When the university received its first students—about 40 in number—in 1825, it was essentially ■ graduate school, with no required courses. For the first few years, students received diplomas, not degrees. To this day, the university has adhered to Jefferson's wishes by never awarding an honorary degree. In 1831, five years after Jefferson's death, the university offered the master of arts degree. Completion required a rigorous program in mathematics, natural philosophy, moral philosophy, ancient languages, and chemistry, ■ list to which two modern languages were added in 1833. This strict curriculum totally contravened Jefferson's elective system. The bachelor of arts degree (not, by the way, ■ prerequisite for the M.A.) was first awarded in 1848 and the Ph.D. in 1880.

Although Jefferson believed that Oxford, Cambridge, and the Sorbonne were "a century or two behind" his vision of the needs of nineteenth-century education, he scoured Europe in his search for faculty. Of the first eight professors, four were from England and the fifth from Germany. At the outset, faculty received a free residence in one of the pavilions and a salary of \$1,500, plus a fee of \$25 for each student in a class. Professors whose classes were large enjoyed a relatively substantial income, while those with smaller classes were considerably less affluent. Because this disparity caused unhappiness, the fee system was abandoned in 1850 in favor of a flat salary of \$3,000 for each professor.

Until early in the twentieth century, the university did not have a president, as such, but the rotating position of

chairman of the faculty. When the board of visitors first raised the issue of appointing a president in spring 1826, Jefferson resisted. Biographer Dumas Malone writes: "Although he did not say so, he was undoubtedly fearful of the concentration of power in anybody's hands and favored dispersal whenever possible." Jefferson's system continued until 1904, when Edwin A. Alderman became the first president of the University of Virginia.

One of Jefferson's other beliefs was that students could be trusted to govern themselves. That view was shattered early. Students rioted, attacking the choice of European professors. Physical assaults prompted faculty threats to resign unless strong action was taken. Accordingly, Jefferson recommended to the board of visitors a very strict code of behavior, among whose strictures were bans on smoking, drinking, and gambling. The most serious riot occurred in 1840, when John A.G. Davis, chairman of the faculty and professor of law, left his pavilion residence to investigate a disturbance. He was shot to death by ■ masked student, who disappeared while free on bail, pending a trial. However, by 1842, student behavior had improved sufficiently that the honor system (still in effect) was introduced. The system, based on the belief that the university is "a community of trust," is unique, especially among state universities, in that judgments as to violation of the honor code are in the hands of students. At first, the code consisted in a student's pledge that he had received no assistance in an examination. Later, students also pledged that they had not offered assistance to another.

In earlier days of the code's operation, the accuser confronted the person he suspected of lying, cheating, or stealing. Today the accuser makes the charge to an advisor, who initiates an investigation, which must offer proof of the action, the intention, and the seriousness of the deed. If a student is found guilty of violating the honor code, there is a single penalty: dismissal from the university (if the student has not left voluntarily). As concepts of honor changed, guidelines were finally promulgated in 1935: "it is essential that the Honor System shall concern itself solely with those offenses which are classified as dishonorable by the public opinion of the student generation involved." With some modifications to protect the rights and the privacy of the accused, the honor system is still regarded by the university as one of its outstanding features.

Eighteen years after the honor system was introduced, the Civil War erupted, causing a major disruption at the university. Most students supported secession, and most faculty opposed it. Many students left the university to offer their services to the Confederacy. While the university stayed open during the war, the only students were those too young to serve or veterans who had been severely wounded. During the war years there were never more than 46 to 66 students and no more than 8 faculty. Not until 1900 did the university attain the number of students it had in 1850. Shortages of food and fuel were com-

pounded by the decline in the Confederate dollar. In March 1865, Union Army General Philip Sheridan and his cavalry approached Charlottesville. Fearful that the university buildings would be burned to the ground, as those at the Virginia Military Institute had been, university authorities sent Professor John B. Minor (one of the country's foremost legal scholars, he later personally borrowed funds to keep the university open) and a contingent of faculty to meet the troops; Minor carried a walking cane with a white handkerchief attached to it. The commander of the advance guard, General George A. Custer, ordered that the university's property be given every protection.

Before the Civil War took its toll on student numbers, growing enrollment necessitated adding several buildings to the university. In 1850, architect Robert Mills, who had studied with Jefferson, was retained to design additional space. His mammoth Annex, joined to the Rotunda by a colonnade, was criticized from the first as being out of keeping with the symmetry of Jefferson's design. It was destroyed by fire in 1895.

Though the destruction of the buildings was averted during the Civil War, Jefferson's centerpiece—the Rotunda—was not spared when faulty wiring caused a fire in October 1895. Attempting to save the Rotunda, an engineering professor tried dynamiting the bridge between the Annex (where the fire had started) and the Rotunda. Unfortunately, he blew a hole in the Rotunda, and the fire spread even more rapidly. Before the fire was controlled, the annex, dome, and interior of the Rotunda had been destroyed. Fortunately, students and faculty had managed to save many of the books and the Galt bust of Jefferson.

To restore the Rotunda, the university engaged the eminent architect Stanford White. After he returned to New York from his first visit to the university, he encountered a friend, who found him in an unusually confused mood. White explained that he had seen Jefferson's plans for the university: "They're wonderful and I am scared to death. I only hope I can do it right." White convinced the board of visitors that Jefferson would surely have constructed the Rotunda as a "simple, single, and noble room," had not practical necessity required two stories. However, there are no documents suggesting that Jefferson had the "single room" plan in mind. A university document describes White's design as "an elaborate Beaux Arts interpretation in the Roman style. . . . White increased the height of the dome room . . . widened the skylight . . . and replaced Jefferson's slender double pillars with large single columns with Corinthian capitals." University authorities were so pleased with White's work that, ten years later, they asked him to design a house for the president, a dining hall, and an addition to the hospital.

In the 1960s and early 1970s, Professor Frederick H. Nichols of the School of Architecture spearheaded a project to restore the Rotunda according to Jefferson's design of a two-level interior. On the 223rd anniversary of Jefferson's birth, April 13, 1976 (also the year of the

U.S. Bicentennial), the restored Rotunda was dedicated. In that same year, the American Institute of Architects recognized the "academical village" as the most significant achievement of American architecture in the past 200 years.

Three years before the fire, in 1892, one of the major social issues with which the university would have to grapple in the twentieth century first surfaced: the admission of women. In that year, Miss Caroline Preston Davis applied for permission to take the examination for the b.a. degree in the school of mathematics. She was granted permission—on the condition that she take the exam apart from the male students. A further condition was that if she successfully completed the examination she would receive a certificate of proficiency, not a degree. She performed very well on the examination and was awarded the certificate. A debate ensued about how the university should treat applications from women. In 1894, both the faculty and the board of visitors voted against admitting women under any conditions. Faculty contended that admitting women to the university "would only serve to draw them away from those excellencies which made that sex such a power in the home." Virginia's general assembly voted to admit women to the graduate and professional schools in 1920–21, a decision which brought vociferous objections from students, faculty, and alumni. Women were finally admitted on the same basis as men in 1970. As the university nears the end of the twentieth century, enrollment is almost equally divided between male and female.

Even as it grappled with the issue of integrating the sexes, the university had to deal with the issue of integration of the races. In 1935, Alice Jackson, a black woman, applied for admission to the graduate school. The board of visitors instructed the dean of graduate studies to reject her application because "education of white and colored persons in the same school is contrary to the fixed policy of the commonwealth of Virginia" and "for other good and sufficient reasons." About 14 years later, a black graduate of Howard University Law School (who had been practicing law for two years) applied to take graduate courses at the University of Virginia Law School. Though the university rejected him, a U.S. Circuit Court of Appeals ordered him admitted. He entered the law school in September 1950, and dropped out in July 1951. In 1953, the university became the first major white southern university to award a doctorate to a black man. The first black professor joined the faculty in 1967, the same year that the first black athlete enrolled.

Through the years, the university has had to live down a reputation as a Southern country club, dominated by insularity and resistance to change. After World War II, a former student wrote: "Should the whole continent of Europe be destroyed by nuclear power, it would not surprise me to read a letter to the *Cavalier Daily* which discussed the effect of that catastrophe upon the parking

problem.” Apparently the university has broadened its horizons, since, as the twentieth century nears its close, the population is only 65 percent Virginian, more than 12 percent of the undergraduates are African-American, and nearly 9 percent are Asian.

As its academic reputation grew, the university attracted more and more distinguished faculty. Both Dumas Malone, the renowned biographer of Thomas Jefferson, and short-story writer Peter Taylor served on the faculty. A legacy enabled the university to institute a Writers in Residence program in the late 1950s. The first to hold that position was Nobel laureate William Faulkner, who remained a lecturer and consultant at the university until his death in 1962. Faulkner was followed by such luminaries as authors Katherine Anne Porter and John Dos Passos, as well as historian Shelby Foote.

In ■ 1969 speech, university president Edgar F. Shannon Jr. reflected: “If Mr. Jefferson were to return to the Grounds and walk along the Lawn under his familiar colonnades, he would find himself very much at home, for

his academical village is still inhabited by honor students in the same dormitory rooms, and senior faculty occupy the same beautiful pavilions. I believe that he would be pleased at the progress that is being made toward fulfilling his dreams of a university.”

Further Reading: Dumas Malone’s *The Sage of Monticello* (Boston: Little Brown, 1981), the sixth volume of his authoritative biography, *Jefferson and His Time*, provides ■ lengthy account of the founding of the university. Another extensive account will be found in *Thomas Jefferson: Passionate Pilgrim*, by Alf J. Mapp Jr. (Lanham, Maryland and London: Madison Books, 1991). *Mr. Jefferson’s University*, by Virginius Dabney (Charlottesville: University of Virginia Press, 1981), provides an extensive and detailed history of the university from its founding to the late 1970s.

—Mary Elizabeth Devine

UNIVERSITY OF WALES

(Cardiff, Wales)

Location:	Constituent colleges located in Cardiff, Aberystwyth, Bangor, Swansea, and Lampeter, Wales.
Description:	A federal university comprised of six constituent colleges enrolling students in undergraduate, graduate, and professional schools.
Information:	University Registry King Edward VII Avenue Cathays Park Cardiff CF1 3NS Wales (01222) 382656 Fax (01222) 396040

The development of the educational system in England and Wales during the early nineteenth century was mainly a matter of middle-class landowners and industrialists prodding Parliament to improve the educational opportunities for their children. Social and economic changes brought about by sudden industrialization made the working classes, especially in Wales, aware of the inadequacy of the county schools run by the Church of England and of the Sunday schools taught in nonconformist chapels. These schools were voluntary and not part of a national system. Neither prepared Welsh children to matriculate into any form of higher education. There were no colleges in Wales until the Anglican seminary, St. David's College, was established in Lampeter in 1822. Lampeter initially trained sons of the gentry and upper classes as ordinands who would then transfer to Oxford or Cambridge for their master's degree. The nonconformist Sunday schools provided basic education in reading the Bible (in Welsh) for younger children, and a forum for discussion for adults, strengthening the literary aspect of the Welsh language, and fostering a national identity which was separate from England yet loyal to the monarchy.

William Williams, a Welsh member of parliament, who had immigrated to England and become wealthy there, initiated an investigation into the education of his countrymen. He was convinced that the system of voluntary tutoring, the lack of training schools for teachers, and the money provided for schools by the gentry and industrialists were not enough. He pushed for a state system in which the Welsh could receive a "proper" education—in English and with English standards.

This inquiry into the educational opportunities provided to Welsh children by Anglican England and by voluntary educational societies proved to be a catalyst for a Welsh sense of pride. The commission report—the infamous "Blue Books" of 1847—noted that the children of Wales were being hindered by the Welsh language and by the deplorable conditions of the schools. The Welsh-speaking children who emigrated from the small towns to the industrial cities were not able to keep up in English-speaking schools that used books in English. The Welsh were not so outraged at the "discovery" that the Welsh language was a hindrance to intellectual, economic, and national growth as they were in the commission's declaration that Wales was a "primitive backwater, ignorant and immoral." The Welsh working-class society long remembered the "treachery of the Blue Books" and the Welsh, across all classes and political strata, were determined to make education a national priority.

From 1847 to the 1860s, children who reverted to the Welsh language in school were made to wear wooden signs around their necks which said "Welsh not." At the same time members of the wealthy Welsh middle class in England, such as Sir Hugh Owens, began a movement for higher education in Wales. Owens had founded a normal training school for teachers at Bangor in 1858; he envisioned it as a working-class university, advancing beyond instruction in education alone. The Forster Act of 1870 had set up board schools in Wales and England, and another act of Parliament in 1889 (the Intermediate Education Act) prepared the way for a state system of secondary education confined to Wales, creating the opportunity for Welsh youth to receive the education necessary for matriculation into colleges.

In his history of modern Wales, Gareth Elwyn Jones wrote that Hugh Owens's efforts to establish a Welsh university which would provide an "intellectual and vocational education, with a scientific bias appropriate to an industrial society," resulted in a new "college by the sea" in Aberystwyth, conceived as a college for north and mid-Wales. Established in 1872 in an abandoned sea-front railway hotel, the Aberystwyth University College survived many reversals, such as fire, risk of financial failure, removal of professors, and an often unmotivated student body, some of whom left before completing their studies, choosing instead to return to the farms and coal mines. But the foundation of Aberystwyth University College attested to how far the Welsh would go to achieve educational parity with England.

Funded by a Sunday school campaign, mythically referred to as "pennies of the poor," Aberystwyth



University of Wales

received more than 100,000 contributions of under half a crown, given by the miners, quarrymen, and farm laborers throughout Wales on special "University Sundays" (*Sul y Brifygol*). The university did not receive the £4,000 government grant, the amount given to establish universities in Bangor and Cardiff; a major contributor to the new college was capitalist David Davies of Llandinam. The government eventually granted £2,500. There were always struggles, however, to keep the college financially afloat.

Despite the hardships, the University College at Aberystwyth served to link the Welsh in spirit and as a society. Tom Ellis, who would become a Welsh patriot, was a student at Aberystwyth in the late 1870s and early 1880s, as was historian John Edward Lloyd and Welsh-language educator/publisher Owen M. Edwards. The composer, Joseph Parry, was the first professor of music at the college. Parry's activities with the National Welsh Revival Movement's music and literary competition, the *Eisteddfod*, may have caused his dismissal from the college. By 1883, Tom Ellis and others would be members of the

ACC, a forerunner of a nationalistic intellectual student society, similar to the later, more renowned *Dafydd ap Gwilym* for Welsh expatriate students at Oxford.

Historian Kenneth O. Morgan has expressed a popular opinion of the political implications of the university at Aberystwyth for the twentieth century, by suggesting that Aberystwyth was a "Celtic version" of the American "Wisconsin idea," a people's college having its own "passionate vision of populist culture, integrated with the society that gave it birth, steeped with the folk nationalism of 'Cymru Fydd,' the Wales that was to be."

Despite the academic progress for some of its students, Aberystwyth still provided an ungainly substitute for an English education and was considered a sublevel university by parliamentary standards. The Aberdare Committee in 1881 called for two universities in Wales, one in the north, one in the south. Affected by Welsh members of parliament in the House of Commons and by Stuart Rendel's lobbying of Prime Minister William Gladstone, the report led to the establishment of the University College of South Wales and Monmouthshire founded in Cathays

Park, Cardiff, in 1883, and the University College of North Wales, established in Bangor in 1884. They were intended to be regional colleges to prepare local students for transfer to English universities.

The first principal at Cardiff, John Viriamu Jones, was a distinguished scientist, who was associated with the liberals and nonconformists of the Welsh mid-nineteenth-century nationalism. The first principal of the college at Bangor was Sir Harry Reichel, an Ulster Tory, not popular with the local radicals; however, with his appointment of John Edward Lloyd as lecturer in Welsh history in 1892, and of John Morris-Jones as professor of Welsh in 1894, he encouraged the national traits of the Bangor region.

In January 1888, fueled with a passion to create a "National University" for Wales, the Cymmrodion Society, a group of London-based businessmen and intellectuals with Professor John Rhys as chairman, met and drafted an application to the Lord President of the council for a university charter. In November 1891, another conference was held (in the Welsh marshes at Shrewsbury). The main issue under discussion was whether this national university should be merely an examining university, or a teaching university—one that would teach and confer degrees on its own students, as advocated by education minister Arthur Acland. The issue hung in balance until Gladstone returned as prime minister in 1892. Gladstone appointed Owen M. Edwards commissioner to study the feasibility of incorporating Cardiff, Bangor, and Aberystwyth into a national university. By January 1893, the charter for the federal university—to be a teaching university, not merely an examining institution—was drafted by a committee of three, headed by Dr. Isambard Owen. The only hindrance to an early incorporation was the provision that St. David's of Lampeter be included, as had been recommended by the Aberdare report of 1881. In August 1893, the House of Lords carried a motion withholding royal assent to the charter unless Lampeter was included. However, Bishop Jayne of Chester, a former principal of Lampeter, claimed that St. David's College was becoming victim to "aggressive and intolerant denominationalism in Wales." Wary of the Liberal nonconformism of the movement for higher education in Wales, Lampeter wanted no part of inclusion.

Gladstone ignored the motion to wait for Lampeter's inclusion, as the Aberdare report provided a clause for the later inclusion of Lampeter. The University of Wales, incorporating Bangor, Aberystwyth, and Cardiff was established by royal charter, November 30, 1893. In 1896, it became a federal institution with the Prince of Wales as chancellor, after the death of Lord Aberdare, the first nominee. A government grant of £20,000 was "grudgingly" awarded in 1894 and another £50,000 was raised by public appeal. Viriamu Jones of Cardiff became the first vice-chancellor, and a plan was implemented to integrate the university with secondary school teaching and inspection. According to Morgan, the university

served as a powerful symbol of popular achievement and of national status: "In no other area of Welsh life, transcending political and sectarian barriers, was national pride more genuinely manifested."

The University of Wales incorporated changes over the years to consolidate and solidify its "Welshness." There were critics who denounced the federal university system's excessive bureaucracy. To detractors, the registry at Cardiff was considered a weak directing agency. In March 1905, Llewelyn Williams, a leader in the *Cymru Fydd*, a union for political nationalism associated with David Lloyd George, attacked the university in the *New Leader*, accusing it of being too detached from the "county schools" and run by a "narrow professional class."

A royal commission (Haldane Commission, 1916–18) granted a supplemental charter to the university which radically revised the federal machinery established under the charter of 1893. New federal bodies were created to serve the particular interests of Welsh learning and culture, including the University Council, an executive body which became responsible for financial matters and the allocation of funds to the colleges. The large senate and court of the old system gave way to the academic board which advised the University Council on academic matters. The Board of Celtic Studies, the University Extension Board, the Council of Music, and the University of Wales Press were also established to promote the work of the colleges in fields of "special importance" to Wales. Ninety percent of the student body were from Wales, making the University of Wales a more local university than any in England.

In 1920 the former Swansea Technical College became incorporated as the University of Wales's fourth constituent college, and in 1931 a supplemental charter was granted providing for the creation of the university's first constituent school; the Medical School of the College of Cardiff then affiliated with the university as the Welsh National School of Medicine.

While the teaching of theology had been previously prohibited within the university, graduates who went on to study at "associated" theological colleges were granted divinity degrees. Three schools of theology were created in the 1930s. The new provisions permitted establishment of joint institutions which combined the resources of the university colleges and of denominational theological colleges in what became nondenominational university schools of technology at Bangor, Cardiff, and a joint Aberystwyth/Lampeter School.

The University of Wales entered a period of expansion and change in the late 1950s and 1960s. An attempt was made to defederalize the university in 1964–66, with the argument that the university was too fragmented with the constituent colleges spread across the country. The Robbins Report of 1963–64 outlined the alleged need for a larger student population, especially in the applied and pure sciences. Lecturers such as Kingsley Amis (Univer-

sity College of Swansea) replied that "more means worse" in response to what he saw as the glut of foreign students. The principals at Cardiff, Swansea, and Bangor supported the movement to split up the university. In the end, the university stayed intact. But by 1968 only 39 percent of the student population was from Wales, and over half came from working-class England.

The university was reorganized in 1967, giving greater authority to the academic board for academic matters within the university. A supplemental charter that year also incorporated the Welsh College of Advanced Technology into the university. That institution, which had applied for its own independent university status due to its steady expansion since 1866 as a school for science, art, and technology, became the University of Wales Institute of Science and Technology (UWIST).

Four years later, in 1972, St. David's College, Lampeter, suspended its degree-granting powers, and due to lack of funding and decline of student enrollment, became a constituent school of the university, named St. David's University College, Lampeter. It entered the university as a liberal arts college, thus ending the special nature of its founding as a sectarian Anglican college in a nonconformist principality.

Important additions to the quality and status of Welsh language education were implemented: the Validation Board, 1974; Board for Welsh Medium Training, 1980; and the University Center for Welsh and Celtic Studies, a centrally funded research institute in Aberystwyth, 1985.

During a period in 1978–79, students held demonstrations and "sit-ins" at Bangor University College to protest the influx of non-Welsh students into the university, following a larger political movement (*Adfer*) which hoped to preserve the Welsh-speaking communities of rural Wales.

A new mission statement adopted in July 1993 rededicated the University of Wales to the "educational, cultural, and economic needs of Wales and to the enhancement of the international standing of the University."

Further Reading: *Modern Wales: A Concise History c. 1485–1979* (Cambridge: Cambridge University Press, 1984) by Gareth Elwyn Jones, ■ senior lecturer in history at University College of Swansea, examines the changes that took place over a 500-year period in Wales. The authoritative, analytical but unfootnoted work contains illustrated documents and reprints of quoted source material. Kenneth O. Morgan's *Rebirth of a Nation: Wales 1880–1980* (New York: Oxford University Press, and [Cardiff]: University of Wales Press, 1981), an academic study prepared as part of *The History of Wales* series edited by Glanmor Williams, is designed to appeal to the general reader. Despite his use of footnotes and his obvious scholarship, this Welsh native and fellow of Queens College, Oxford, has placed the University of Wales, its founding, and incorporations, into the wider perspective of the Welsh personality.

—Carol Shilakowsky

UNIVERSITY OF WASHINGTON

(Seattle, Washington, U.S.A.)

Location: The University of Washington is located in Seattle, the largest city in the state of Washington, just north of the downtown area. The 703-acre campus borders the western shore of Lake Washington.

Description: The University of Washington is a public research university governed by a nine-member board of regents. Enrolling approximately 35,000 students, the university is comprised of 16 major schools and colleges. These include law, medicine, business, engineering, dentistry, and education in addition to the traditional arts and sciences. Its nationally respected graduate and professional schools enroll over 9,000 students. A center for regional education and research, its schools have advanced the development of Washington's communities and industries.

Information: University of Washington
Visitor's Information Center
Box 355502
4014 University Way, NE
Seattle, WA 98195-5502
U.S.A.
(206) 543-9198

The University of Washington, Seattle, was founded in 1861 as the University of the Territory of Washington, before Washington acquired statehood. The federal government had, in 1854, reserved acreage in each state and territory for the development of institutions of higher learning. Reverend Daniele Bagley, a Seattle minister, established the university from the sale and barter of this land, erecting three buildings—a two-story academic building, a residence building for students, and a president's house—on a ten-acre wooded site that is now downtown Seattle. In 1860, Seattle was a village of 200; the surrounding countryside was dotted with subsistence farms. Most residents had yet to provide themselves with the bare necessities, let alone with schools; the university was the first territorial school opened in Seattle. The university, which consisted of two instructors and 30 pupils during its opening term in 1861, amounted to little more than a frontier schoolhouse that closed several times during its earliest years due to lack of funding.

The university grew haltingly during the nineteenth century. A legislative appropriation of \$3,000 for student

scholarships in 1877 nearly tripled the student body from 43 to 126. During the next several years, enrollment ranged from 140 to 160 students, 35 to 40 in college-level courses. The university instructed students of both sexes in a variety of courses, including English, history, algebra, physiology, Latin, and Greek. By 1881, between 32 and 40 classes were offered regularly five times a week in 40-minute periods. Entrance to college-level courses did not require an exam but did require a proficiency in reading, spelling, geography, and fractions. In addition to programs in the arts and sciences, the university established a normal course for teacher training and a commercial course to prepare individuals for careers in business.

During the 1880s, the territory grew exponentially. With the completion of the Northern-Pacific Railroad, tens of thousands settled in the area of Puget Sound. By 1891, Seattle had grown to a population of 50,000. Legislative appropriations increased gradually from an initial \$3,000 biennial appropriation for operational expenses in 1884 to include \$10,000 for salaries in 1888. In addition, territorial scholarships were continued with an additional sum to cover student travel expenses. An enrollment of 217 in 1888 increased to 273 in 1889, with 63 in college-level courses. The declaration of statehood in November of 1889 brought about an additional land grant of 100,000 acres for the university and provided the state legislature with impetus for increased investment in education. President Thomas M. Gatch (1887–95), the first university staff member to hold a doctorate, presided over the university during this positive time of funding and growth. He advanced the university's capacity to function as an institution of higher learning, developing genuine differentiation of departments and disciplines and hiring instructors with more advanced professional training and greater diversity and experience.

In 1895, following the rapid growth of the 1880s and with further anticipated growth, the university moved from the heart of the city to a 350-acre campus along Lake Washington. Nearly 200 students attended classes in the newly constructed Administration Building (renamed Denny Hall in 1910), which boasted 20,000 square feet in floor space and included classrooms, laboratories, meeting halls, and library holdings. The state legislature appropriated \$90,000 in 1895 for school operations and nearly as much for additional buildings and improvements. Increased funds allowed the appointment of new, better-qualified faculty; by 1896, 6 of 15 professors of collegiate subjects held doctorates. The promise of continued financial support, coupled with the increasing enrollment in college-level courses, prompted Presi-



University of Washington

dent Mark W. Harrington's (1895–97) decision to discontinue the preparatory program. The state elections in November 1896, however, reversed the university's fortune. The biennial appropriation for operations failed to cover the salary promised to Harrington, who resigned in protest.

The university languished during the year following Harrington's resignation but regained direction with the appointment of Frank P. Graves to the presidency in 1898. Graves (1898–1902) reestablished instruction at the preparatory level in an effort to ensure adequate preparatory education in Washington (at this time less than 12 schools provided a four-year program) and to ensure demand for the university's programs. Enrollment tripled during Graves's term, from less than 200 students in 1898 to nearly 600 in 1902. Graves strengthened upper-level instruction, hiring additional faculty and restructuring and revitalizing educational programs. Under Graves's direction and example, faculty spoke to audiences across the state promoting the university and spreading awareness of the available educational opportunities. The School of Pedagogy advanced from a normal training center for teachers to a thorough program in educational practice. A School of Mines branched out from the College of Engineering and Mines to offer five different programs to 45 students in 1899. A School of Law was established in 1899, which, by 1902, enrolled 68 students.

Rapid growth continued during the presidency of Thomas Franklin Kane (1902–14). Each year hundreds more students enrolled, increasing from 650 in 1902 to over 2,300 in 1913. The growth of the student body necessitated numerous faculty hires. Kane's appointments greatly strengthened the academic quality at the university; 30 of the men appointed held doctorates from such universities as Harvard, Yale, Columbia, Cornell, Chicago, Michigan, and Northwestern. Departments composed of one or two instructors in 1902 were transformed by 1914: English claimed 11 instructors; mathematics, 10; civil engineering, 9; political and social science, 9; and chemistry, history, philosophy, and modern language, from 6 to 8 each. The university soon experienced a space shortage, partially alleviated by the construction of three permanent structures and numerous temporary structures for the 1909 Alaska-Yukon-Pacific Exposition.

The exposition reflected the growing importance of western industry in the United States, and the selection of Seattle as site for the exposition attested to Washington's centrality in regional development. Washington developed rapidly during the early twentieth century. Total population nearly tripled in 14 years, from 518,000 in 1900 to 1,408,000 in 1914. The lumber and fishing industries became major enterprises and the output of manufacturing in Seattle alone more than doubled. Improvement of the state system of secondary education allowed the discontinuation of the university's prepara-

tory programs and a deepening commitment to research and higher education. Much of the university research directly benefited the development of the state. Geologists mapped and appraised Washington's mineral deposits. Botanists and zoologists offered suggestions for combating Canadian thistles and gypsy moths. Sanitary engineers assisted in the development of hospital sewage plants and the Cedar River system then being developed for Seattle.

Under President Henry Suzzallo (1915–26), research provisions improved with the development of a mines experiment station in 1917, a hydraulics laboratory in 1920, ■ mines laboratory in 1921, and the expansion of the Marine Biological Station on Puget Sound following a federal gift of 484 acres. Course and program offerings in numerous fields diversified and improved. The program in commerce became the College of Business Administration in 1917. Sociology separated into its own department, psychology separated from philosophy, and Chinese and Russian were added to the foreign language offerings. A program in aeronautical engineering began with William E. Boeing's provision for the construction of a four-foot wind tunnel and aeronautical laboratory. Although some protested the acceptance of private gifts by a publicly funded institution, private donations increasingly benefited the university during Suzzallo's presidency. Horace C. Henry donated his private collection of paintings (over 400,000) along with \$100,000 for the construction of a campus art gallery. Agnes H. Anderson provided for the construction of a general purpose building in 1925 with the stipulation that it hold the School of Forestry. Private donations also provided for student scholarships, faculty chairs, and research.

Enrollment increased steadily from 2,300 in 1914 (despite a 30 percent drop during World War I) to 4,740 in 1919. Graduate studies, which had grown slowly during the twentieth century, enrolled 350 students in 1922, including 150 candidates for the master's degree and 30 candidates for the Ph.D. In 1915, the legislature authorized the erection of two buildings: a home economics building completed in 1916 and ■ commerce building completed the following year. The construction of Philosophy Hall was authorized in 1917, suspended during the war, and eventually completed in 1920. A building fund was established that included revenue collected from the lease of the university's forest lands and former campus in downtown Seattle as well as matching funds allocated by the legislature from tax dollars. This fund allowed the construction of new permanent structures at ■ rate of approximately one every 18 months. In 1926, the first unit of a new university library was completed. Promoted by Suzzallo to be the soul of the university, the library resembled ■ cathedral with its Tudor vaults and 36-foot high stained-glass windows. The university continued to grow with the construction of seven buildings in the next

six years: a women's physical education building, a men's pavilion, three academic buildings, and an oceanography laboratory.

The financial crisis of the Great Depression resulted in serious allocation reductions, the elimination of 1 in 12 instructors, and a 32-percent wage and salary cut. The regional economy recovered in the mid-1930s, and the university redoubled its efforts toward quality as well as quantity. A department of general studies was developed that allowed an escape from established lines of study. Salaries were raised, teaching loads reduced, and fringe benefits increased, attracting more-qualified and better-respected professors. The university conducted more research of use to the state, including studies which led to the rehabilitation of salmon fisheries, assistance in the effort to restock state oyster beds, and efforts to develop the frozen foods industry.

University research and educational capacity increased greatly during the 1940s and 1950s. Enrollment, which had dropped from 10,000 to 7,000 during World War II, increased to 14,000 by September 1946, to 16,650 by 1948, and to over 18,000 by 1960. A postwar construction program included \$21.5 million for civil and electrical engineering laboratories, nearly as much for laboratories in other sciences, \$4 million for general classrooms and library stacks, over \$2 million for administration and student union buildings, and \$9 million for the newly created medical and dental schools. The university benefited from the federal government's transference of research responsibilities from the military to the state universities. During and after the war, millions of dollars became available for research in many fields. In 1946 the university expended \$660,000 on special research through grants and contracts; in 1953, over \$2 million; in 1956, \$5.75 million; in 1960, nearly \$14 million. The university acquired a cyclotron for nuclear research and purchased a nuclear reactor for teaching and research; in 1959 the administration announced a comprehensive program of graduate training in nuclear engineering.

During the 1960s, enrollment grew by 1,000 students per year until the state established 17 additional community colleges and the Evergreen State College to serve educational needs in southern Washington. The university emphasized upper-division education (junior- and senior-year courses held the designation of upper-division courses; freshman- and sophomore-year courses were lower-division) and made admissions requirements more selective. Offices of Equal Opportunity and Minority Affairs were formed to promote the education of minorities and women. Provisions for financial aid, tutoring, and academic counseling were made to ensure the ability of minorities to attend and to excel at the university. New courses and programs were created in women's studies, African-American studies, American-Indian studies, Asian-American studies, and Mexican-American studies.

Reviews of existing departments and fields led to the establishment of new departments and interdisciplinary programs in fields such as biomathematics, genetics, and ceramic materials. The School of Art added an art history curriculum. The School of Drama received support from the Rockefeller Foundation and the Seattle Repertory Theatre to initiate an intensive actor training program. The graduate school worked with college deans and department heads to further faculty research. By 1969, the university ranked among the top five institutions in the nation in receipt of federal research money.

Some students protested the acceptance of federal funds and the resulting research used to further the war in Vietnam. Student anti-war protest culminated in the fire-bombing of the Naval ROTC facilities on September 18, 1968, beginning an 18-month period of violent attacks on university property. The last in a series of campus disturbances occurred after the U.S. invasion of Cambodia in April 1970. Upon learning the news of the students killed at Kent State, thousands surged from the campus past police onto Interstate 5, blocking traffic in their march through the city to the federal courthouse.

As problems of social unrest dissipated in the early 1970s, the university faced difficulties of another sort. A faltering state economy led to reduced appropriations and the reduction of state research funds for environmental health issues, forest product development, aerospace engineering, and development of the fishing industry. President John R. Hogness (1974-79) attempted to offset these losses with money from private sources, increasing the activities of the development office to solicit private donations and to increase the alumni fund. He also attempted to raise public approval and support of the university with television and radio advertisements and by emphasizing the need for faculty to speak to civic, professional, and community organizations across the state. In 1981, the board of regents declared the first state of emergency in university history, permitting the university to remove faculty and staff due to fiscal stress. Although unstable funding continued during the 1980s, the university retained strength in its core disciplines through the streamlining of existing programs.

In 1990, the University of Washington opened two new campuses, one in Bothell and one in Tacoma, to broaden access to higher education; these campuses together opened to approximately 200 students and presently enroll 1,400. Throughout the 1990s, enrollment at the Seattle campus has averaged 32,500. With numerous state community colleges available to high school graduates of lesser academic standing, undergraduate admission to the university is highly competitive. Programs leading to advanced degrees are offered in over 100 areas. Of the 9,000 students enrolled in advanced studies, 35 percent are enrolled in programs in the college of arts and sciences; engineering, education, business administration, nursing, and medicine enroll significant percentages

as well. In 1995, the university awarded over 6,000 bachelor degrees, nearly 2,000 master's degrees, 482 doctorates, and 370 professional degrees.

by Charles M. Gates (Seattle: University of Washington Press, 1961), and *Into the Second Century: The University of Washington, 1961–1986*, by Jane Sanders (Seattle: University of Washington Press, 1987).

Further Reading: Two overviews of the university are *The First Century at the University of Washington, 1861–1961*,

—Beth Rillema

UNIVERSITY OF WISCONSIN

(Wisconsin, U.S.A.)

Location:	On 26 campuses throughout Wisconsin.
Description:	A state-wide system of universities, freshman-sophomore centers, and extension services.
Information:	Office of University Relations University of Wisconsin System 1856 Van Hise Hall 122 Linden Drive Madison, WI 53706 U.S.A. (608) 262-3571

The French fur traders who first explored what is now Wisconsin were only the beginning of a stream of immigrants who would travel from their homes in such countries as England, France, Norway, Finland, Germany, and Sweden to settle the Wisconsin area. Although ethnically diverse, these men and women shared some character qualities in common. Hardy, self-reliant, and adventurous, they left everything behind to travel to this new world. They also shared one critical belief. They believed that what the new world offered—self-determination and a government that existed for the people—was worth the sacrifices they had made. It was in this crucible of idealism, independence, and interdependence between the good of the people and the good of the state that the University of Wisconsin was born. And the circumstances of that birth have shaped the history of the University of Wisconsin, the state of Wisconsin, and the development of higher education in the United States as a whole.

In the years immediately following the American Revolutionary War, European nations ceded the lands which they had formerly controlled to the fledgling U.S. government. The land which is now the states of Ohio, Indiana, Illinois, Michigan, and Wisconsin became known as the Northwest Territory. In 1787 the United States, wanting to set some basic guidelines for its new properties, passed the Northwest Ordinance. The Northwest Ordinance not only reiterated the uniquely American concepts of religious freedom and justice by due process, but also established in the northwest lands the unique, developing concept of the state university, stating that “religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged.”

The first assembly of the Wisconsin territory met in 1836. Governor Dodge, in his welcoming address, urged

that congress be petitioned to allow one township of land to be sold, and the proceeds of the sale be used for the establishment of an academy for the education of youth. He left the location and government of the institution to the legislature. The first order of business, however, proved to be the location of the capital. Debate raged over which existing city to name, but a popular judge, James Doty, who owned much of the land around Lake Mendota, succeeded in convincing the legislature to build a new city for the capital, at a junction of four lakes, and to name the town Madison (after James Madison, who had died that year).

The territorial legislature moved in 1838 to establish a University of Wisconsin at the newly established capital, but it was not until Wisconsin's statehood in 1848 that the means for establishing a state university were provided. The state legislature established a board of regents to administrate the new college. On February 5, 1849, the first 17 students began remedial classes in rented space at the Wisconsin Female Academy, and the Wisconsin State University was born.

The idea of the state university implied a break from the traditional European models for higher education—small, privately controlled institutions (usually by a particular religious denomination) with classical curricula and student bodies drawn from society's elite. Inherent in the idea of the state university was the belief that providing higher education was a basic responsibility of government, that education should be available to every citizen who could benefit from it, and that education should meet not only the intellectual desires of the scholar, but also the practical needs of the society, by equipping the citizenry for all sorts of trades and professional occupations. That the University of Wisconsin was founded on these principles is evident in the words of its first chancellor, John Hiram Lathrop: “The American mind has grasped the idea and will not let it go, that the whole property of the state whether in common or in severalty, is holden subject to the sacred trust of providing for the education of every child in the state.”

State universities—under the direction of fledgling governments and without the benefit of established precedence, clear direction, or solid funding—had their difficulties, and the University of Wisconsin was no exception. The university had been planted in a town barely ten years old, where lodging was scarce before the construction of dormitories. When the university was founded in 1848, the area was still part of the western frontier, so a spartan existence was the norm for most students, even after dormitories were built. Rooms were



University of Wisconsin, Madison

heated by wood stoves. Students were responsible for gathering their own wood, a laborious, time-consuming process that the students sometimes abandoned in favor of stealing wood from other students. (A rash of wood theft in the 1850s led to one group of students filling their logs with black gunpowder. A few spectacular explosions later, the pilfering stopped.) Students slept on straw gathered from the university farm and survived on coffee, bread, molasses, graham mush, and an occasional roasted potato. Quail were so thick that they sometimes flew in the classroom windows. Game of all sort was plentiful, and livened up the otherwise meager diets of those first scholars. Difficulties of life on the frontier in general, however, limited enrollment in the regular college classes to only 41 students as late as 1865. In fact, in 1864 no commencement was even held, as all but one member of the senior class had joined the army.

The years after the Civil War saw the idea of the state university take hold and flourish. At the University of Wisconsin, enrollment—bolstered by leagues of returning soldiers—reached 300 students by 1870. The Morrill Land Grant Act of 1862 had committed 240,000 addi-

tional acres of land to the university with the condition that the land be used to encourage agricultural and mechanical arts. The agricultural department opened in 1868. Paul Chadbourne, chancellor of the university at that time, declared that the “objective of the state colleges is to obliterate the supposed superiority of the so-called learned professions by securing . . . the highest education for those who choose industrial pursuits, thus lifting agriculture and mechanic arts from the plane of mere routine labor to the dignity of learned professions.”

The state college philosophy really came of age, however, under the tenure of the next president, John Bascom. Bascom became president of the university in 1874. One of his first acts was to abolish the separate female college and make the university truly coeducational. Bascom pushed for the establishment, by the legislature, of a system of public high schools (which, incredibly enough, had not existed), as well as for the first state millage tax support of the university. Rapid expansion of science, agriculture, and engineering facilities occurred. Blending roles in academic and state affairs, he campaigned for laws to regulate sales of liquor and played a leading role

in the Prohibition Party. Intensely religious and an ardent supporter of human rights, he also gave popular lectures on workers' rights and the regulation of industrial monopolies. Bascom's administration saw the first practical tests of the lofty plan of the state university to benefit the people—agricultural short courses and farmers' institutes began being offered during his years in office.

When Bascom left office in 1887 after 13 years, enrollment at the university had only increased by 200 students. But the concept of the state university had been defined and the quality of the service rendered to the student and the state had been tested. The next 15 years saw the university grow—enrollment increased from 500 to 3,000—and its intellectual and social life began to resemble that of the university of today. Collegiate athletic teams in football, crew, and track and field were formed. College journalism and oratory made their mark on the campus. Social activities such as concerts and balls were held. The concept of the state university was also further realized. The school of education was founded, with a special appointee responsible for accreditation of state high schools. A school of commerce and a school of pharmacy were established. The school of economics, political science, and history was expanded. The first departments in the nation in the disciplines of psychology and Scandinavian studies were established. A State Laboratory of Health was founded. Agricultural support was expanded, leading to two important achievements in the field of agriculture by University of Wisconsin faculty: the invention of the round silo and the development of the Babcock butterfat test, which became the industry standard for measuring the quality of dairy milk.

During this period (1892) the university's first Ph.D. was awarded—to Charles Van Hise, who in 1904 became the president of the university. Governor Robert La Follette (who studied under Bascom) later remarked that it was Bascom's teaching that originated what has come to be called the "Wisconsin idea" in education. But it was under Van Hise that the "Wisconsin idea" became a living doctrine that carried the traditional concept of the state university a level further. The "Wisconsin idea" embraced the idea of academic government leaders advising the administration, thus helping to reform the government. The central function of the state university was the training of the electorate and the specialists who would offer their expertise to the government, thereby influencing the entire populace. In effect, the entire state was the campus.

Van Hise once wrote: "I shall never rest content until the beneficent influences of the University are made available to every home in the state. . . . A university supported by the state . . . for all its sons and daughters . . . can place no bounds upon the liens of its endeavor." He lost no time in taking steps to further realize the objective of using the university to better the state. In his inaugural address he proposed appointing faculty members as state advisers. In the years that followed, close ties between

university faculty and the state government, led first by Governor La Follette (Van Hise's former classmate), and then by other progressives, led to a wave of progressive legislation that captured national attention. Wisconsin was called "an experiment station" in politics, and a "state-wide laboratory." Theodore Roosevelt himself wrote that "all through the Union we need to learn the Wisconsin lesson of scientific popular self-help."

University faculty were performing research in this laboratory. Members of the university faculty helped government officials draft reform legislation and served on regulatory commissions. When a board of public affairs was set up to watch over government operations, many faculty members served in that capacity as well. One writer observed: "Under the influence of university men, Wisconsin has become the recognized leader in progressive and practical legislation." Faculty members Richard Ely and John Commons crusaded for labor rights and collective bargaining. Progressive legislation passed during Van Hise's tenure included worker safety and compensation laws (the first Workmen's Compensation Act); regulation of insurance, railroads, and utilities; conservation initiatives; and corporate income tax. Wisconsin, during this period of time, also established the legislative reference bureau, the concepts of referendum and initiative, and the direct primary, in an effort to decrease the power of the party bosses.

In tandem with the Wisconsin idea of academic advice to government was the idea that the university should serve the state. The agricultural contributions of the university continued to grow; during Van Hise's rule the first U.S. departments of agricultural economics and experimental breeding were established. University researchers discovered vitamin A and vitamin B and demonstrated their importance in animal feed. Van Hise, hoping to take what worked with agriculture and apply it into every area of academic endeavor, established the UW Extension Service. College classes were offered in several satellite locations, aiming, in the words of Van Hise, to make "the boundaries of the University the boundaries of the state."

The Progressive movement fell out of the spotlight with America's entrance into World War I, but the reforms pioneered by university faculty, with the blessings of state government, were eventually adopted by much of the rest of the country, and in Wisconsin, the practice of the Wisconsin idea continued. A physics research project led to the development of a three-element power vacuum tube capable of voice radio transmission; WHA, the nation's oldest continuous radio station, began broadcasting from a laboratory at UW and eventually became a statewide educational radio network. The nation's first school of speech correction awarded the first Ph.D. in communicative disorders. The university opened Wisconsin General Hospital. An agricultural professor's discoveries with ultraviolet light and vitamin D helped to wipe out infantile rickets. The newly formed Extension

Service proved a boon when returning soldiers again swelled enrollment—the extension centers allowed the student body overflow to begin course work at home before transferring to the main campus.

The extension centers continued to prove useful throughout the Depression, allowing students who lacked the money for room and board to take their first- and second-year classes at home. University agricultural researchers maintained their reputation, discovering that a niacin supplement in the diet prevents pellegra and that iodine in salt prevents goiter.

By the time the Japanese bombed Pearl Harbor, the Wisconsin idea was ingrained, and the university and the United States entered the war together. Wisconsin physicists shipped the electrostatic generator they developed to Los Alamos for use in the development of the atomic bomb. Then-president Dykstra himself served as the federal chairman of the draft and served on the National Defense Mediation board. The university enrolled almost 2,000 military troops in Navy radio school. University officials created an Emergency Invention Development Council; university resources were involved in enlistment programs, in pilot training, in cooks' and bakers' schools, in war bond drives, and in free publications to the military forces. The Extension Center system expanded again following the influx of postwar GIs.

The years since World War II have seen the university grow into one of the nation's largest and most respected institutions of higher education. In 1971 the state legislature combined all the state colleges into one single University of Wisconsin, creating a huge public system comprised of two large research university—the University of Wisconsin–Madison and the University of Wisconsin–Milwaukee; plus 11 other universities, 13 centers for first- and second-year students, and an extension system that reaches all 72 counties and over 1 million people. In the last few decades, the university has consistently ranked among the top schools in the nation in measures of academic excellence. At the same time Wisconsin communities have relied on the university for help with taxation, traffic, pollution, school reform, law enforcement, social welfare, zoning problems, financial planning, and dissemination of new agricultural methods and technology.

While the Wisconsin idea has provided a climate in which both the university and the state of Wisconsin have flourished, this blending of the interests of government and academia has at times been a tightrope that proved difficult to traverse. Student commitment to changing social and government policy led to violence on campus during the turbulent 1960s. A riot in the spring of 1966 resulted in injuries to some students and police; a bomb detonated at the Mathematics Research Center in 1970 killed one student and injured three others.

However, the greatest test of the state university occurred nearly a century earlier, in 1894, when many state institutions were seeking to define the limits of the state's role in university affairs. A state official who was also a member of the university board of regents wrote a letter to the newspaper in which he accused Richard Ely—a UW professor and champion of social welfare—of stirring up worker strikes, encouraging boycotts against non-union firms, and teaching socialistic theories in his classes. National public attention eventually forced a formal hearing, in which the regents exonerated Ely. The verdict in the Ely hearing and the proclamation of the regents acquitting him became important for the cause of academic freedom throughout the country; Ely later termed the proclamation “a beacon light in higher education in this country, not only for Wisconsin, but for all similar institutions.” The words of that proclamation are now permanently affixed to the front of Bascom Hall, and have been called the Magna Carta of the university. “Whatever may be the limitations which trammel inquiry elsewhere, we believe that the great state University of Wisconsin should ever encourage that continual and fearless sifting and winnowing by which alone the truth can be found.”

Further Reading: Merle Curti and Victor Carstensen's *The University of Wisconsin* (Madison: University of Wisconsin Press, 1948) is a detailed, scholarly account of the history of the university from its founding until 1946. Robert Guard's *University Madison—U.S.A.* (Madison: Wisconsin House, 1970) offers vignettes of the university's history from its inception through the turbulent period of the 1960s.

—Wendy Sowder Wippel

UPPSALA UNIVERSITY

(Uppsala, Sweden)

Location:	In Uppsala, a city of 160,000, approximately 40 miles north of Stockholm.
Description:	A state-supported institution with over 18,000 students in undergraduate, graduate, and professional programs.
Information:	Information Office St. Olofsgatan 12, Uppsala Box 256, S-751 05 Uppsala Sweden 18 18 25 00

Uppsala University in the Swedish city of the same name was founded in 1477. Although that date makes Uppsala the first such educational institution in Scandinavia, it was certainly not the first in Europe. In fact, Uppsala University was created so that Swedish youth could be educated in their own country rather than heading for Paris, Prague, Bologna, or Leipzig. The university was not an instant success. It was opened in 1477 by the Catholic Church, which provided its financial support and its *raison d'être*; like many other such institutions of the Middle Ages, it was founded as a theological school for the training of clergy and civil servants. The early years remain largely unknown except for one fortunate circumstance. Textbooks were not used until the end of the nineteenth century. Classes were taught in the early years as lectures (with material often read by the professors directly, and dryly, from their notes). Students took down the lecturer's words and used the notes for study. Olaus Johannis Guthro, ■ student at the university from 1477 to 1486, took notes all the time and collected them, along with notes from his fellow students and his teachers, in seven volumes of notebooks that were returned to the university's library in the seventeenth century. These notes reveal a course of study that was heavily Aristotelian, and they show a view of the universe with the earth at its center. The dozen or so students did not pay tuition and were housed in church lodgings, probably without charge.

A major problem arose for church-supported institutions such as Uppsala in the form of the Protestant Reformation. As the Roman Catholic Church lost its influence with the population and especially with the government, the university also lost its supporters. Sometime around 1520, the school went into ■ state of decline and became moribund.

Not until the end of the century did the university reappear. In 1593 political and religious leaders meeting at Uppsala reestablished the university as a free Protestant institution, with three professors of theology and one each in astronomy, natural philosophy, mathematics, and logic. The 70 students were given free accommodations; both students and faculty enjoyed special societal privileges, including relief from taxes and from being brought before a public criminal law court. (The often unruly students were instead hauled before the University Senate, which often punished infractions more severely than did public courts.) Professors were paid with fishing rights, grains, and so on.

King Gustav II Adolf (Gustavus Adolphus), who reigned from 1611 to 1632, saw the wisdom of having a place within Sweden to educate civil servants ("Swedish men," as the Constitution read until 1923) and teachers. The king provided the financial backing for the reborn university. Teachers received salaries. Gustav II Adolphus's collection of books provided the nucleus for the university library. He appointed his old tutor, Baron Johan Skytte, as the university's chancellor, thus strengthening ties between crown and academia. His generous gift of 300 estates in 1624 formed the basis of an endowment that is still important to the university.

Students in the seventeenth century were subject to what today would be called hazing: each one was "cleansed" upon his arrival at Uppsala. In her history of Uppsala University, Karin Johannisson describes the ordeal:

Clad in motley garments and with horns, donkey's ears and boar's tusks, [the student] was chased with an axe before the public. There he was abused and manhandled with the ceremonial tools . . . tongs, saw and plane, before the "depositor" put salt on his tongue, poured wine over his head and finally declared him to be a "free" student. The rite itself, not to mention the subsequent penal year during which the wretch was forced to "fag" for an older student, degenerated quite early on and was forbidden in 1691.

Another change that occurred in the seventeenth century came in the faculty of medicine. Medicine has been an important area of interest at Uppsala almost as long as theology. The first physician joined the faculty in 1613, and the faculty of medicine was founded in 1620, although most Swedes still preferred to study medicine in other countries, especially Holland. One famous professor of



Uppsala University

medicine was Olof Rudbeck, who in the seventeenth century was a scholar of anatomy, botany, mechanics, music, and archaeology—all the while dabbling in university politics. Through dissecting hundreds of animals, Rudbeck demonstrated the lymphatic vessels and their function in anatomy—building upon William Harvey's discovery of blood circulation. He also constructed an anatomical theater on the roof of the main building, the Gustavianum, with steep tiers of seats so that students could observe dissections. Unfortunately, it was particularly difficult at that time to obtain corpses for study, since only criminals, suicides, and illegitimate children could be dissected. Thus the theater, which still exists today, was used only a few times for its intended purpose.

Rudbeck also laid out a botanical garden for study and for the use of researchers seeking medicinal drugs and herbs. Predating Linnaeus by a century, Rudbeck oversaw the carving of 7,000 wood printing blocks to make hand-painted plates of botanical specimens. His life's work,

however, was destroyed in a great fire that consumed much of the city of Uppsala in 1702. He then turned his attention to Gothic archaeology and spent much scientific energy and skill attempting to prove that the lost continent of Atlantis was really Sweden. His son, Olof Rudbeck the Younger, succeeded him in the position of chair of medicine, but he had little interest in that discipline. He had spent much of his time exploring Lapland and documenting that northern region's flora and fauna; his work was also destroyed in the fire. Rudbeck the Younger's *Book of Birds* is considered the beginning of scientific zoology in Sweden.

Not surprisingly, with the varied interests of the major figures, the study of medicine proper faltered in the seventeenth century in Uppsala. Then the university hospital was founded by Lars Roberg in 1708. Roberg seems not to have been overly optimistic about support, since his request for funds included the purchase of only one bed and linen, plus food for only one patient. The hospi-

tal did not exceed his dreams; the university provided little support. In order to raise funds, Roberg was reduced to charging admission fees for those wishing to observe operations. He even rented part of the hospital as a tavern, but the scandal led to a wholesale defection by the hospital staff, closing that commercial venture. Roberg did manage to publish the first anatomy textbook in Swedish rather than Latin. Some of the terminology was considered so "explicit" that the censors forced Roberg to revise the text.

The hospital closed in the 1720s. Luckily, it was reopened in time for the appointment of Carl von Linné as professor of medicine in 1740. Carl von Linné, or Linnaeus, is still the most famous professor associated with Uppsala University. With his system of zoological and botanical classification of all living matter, he laid the basis for the study of zoology, and he was the first to place humans in the hominid family of the apes, naming humans *Homo sapiens*. He also recognized sexuality in plants as well as in animals; his master work *Species Plantarum* is still internationally recognized for its fundamental importance in the nomenclature of the plant world. Not only was Linnaeus a brilliant researcher, he was also an unusually gifted teacher. Where others of his colleagues still presented dry lectures and read from their scripts, Linnaeus drew an audience of 200 to 300 (a third of the student body at that time) to his lively demonstrations or his botanical rambles around Uppsala.

Linnaeus's followers traveled far and wide to carry on his work. One of his students, Carl Peter Thunberg, traveled to Java, to South Africa, and to Japan. He charted Japan's unknown plants in *Flora Japonica*; he also redesigned the botanical gardens near Uppsala Castle. Thunberg held the Linnean chair of natural history and pharmacy from 1784 until his death at an advanced age in 1828.

While Linnaeus and his followers were bringing a golden age to zoology and botany, the study of medicine at Uppsala was again in decline. Professor Nils Rosen (von Rosenstein), appointed in the same year as von Linné, was able to renovate and reopen the hospital, although it never had more than a handful of beds. Demonstrations in anatomy, surgery, and obstetrics were carried out, although not without controversy. (Abortion and impotence were considered shocking topics for study.) Rosen wrote a number of medical textbooks, including a classic on pediatrics that was translated into a number of languages.

The teaching of medicine continued at Uppsala for the next century in surges and declines, including an eventually successful struggle to prevent the faculty moving to Stockholm. By the beginning of the nineteenth century the hospital was still struggling financially and had only a dozen or so beds. In 1831 the university received a state grant used partially to improve and run the hospital, which grew to 40 and then nearly 100 beds when the university and county hospitals were joined in the 1850s.

Once more, disaster struck. It was the practice at that time to fumigate mattresses by smoke-treating them over burning coal strewn with juniper bushes. Since the mattresses were made of straw, it is not difficult to envision the result: an 1862 fire that burned the building to the ground and killed 30 patients. Rebuilt, literally from the ashes, the new hospital, opened in 1867, was the most modern in northern Europe.

Later advances in medicine at Uppsala included: research into ophthalmics by Allvar Gullstrand, winner of the 1911 Nobel Prize for physiology or medicine; another Nobel Prize awarded in 1914 to Robert Barany for work in otology performed primarily at Uppsala, although he later moved to Vienna; the first appendectomy in Sweden, carried out by Karl Gustaf Lennander in 1889; an operation to remove a bullet from a patient's brain by Thor Stenbeck in 1896, believed to be the first time a metal object was visualized via Roentgenphotography in the brain prior to surgery; and the research by pathologist Robin Fahraeus in the 1920s that added the normal values of erythrocyte sedimentation ("sed rate") to routine health examinations.

While medicine has been the major source of renown for Uppsala University over the centuries, it is not its only area of prestige. Anders Celsius, already a famous astronomer, received funding to support an astronomical observatory in Uppsala in the 1730s. There he studied the aurora borealis, the stars, and the constellations. Through his experimentation he developed the temperature scale that bears his name, delineating 100 degrees between the freezing and boiling points of water.

Another eighteenth-century physicist of renown was Samuel Klingenstierna, who gained fame for his theatrical and popular lecture style using Leyden jars, air pumps, and magic lanterns. Klingenstierna also helped improve the telescope. He had rejected Isaac Newton's belief that a problem with the refraction of light was insoluble. Using geometric methods, he provided a solution, which provided new sharpness in the study of heavenly bodies.

A quartet of physicists (two father-and-son pairs) brought honor to Uppsala for over 100 years. Anders Jonas Angström, after whom a length of measurement (one ten-millionth of a millimeter) was named, began spectroscopic research in the new Physicum laboratories; his interest in this research was carried on by his son Knut. From Knut the baton was passed to Manne Siegbaum and eventually to Siegbaum's son Kai; with increasingly sophisticated instruments and measurements, the structure of materials has been an important focus of research in Uppsala laboratories to the present day. The work brought Nobel Prizes in physics to Manne (1924) and Kai (1981) Siegbaum.

Scientific work at Uppsala was not always recognized at once for its brilliance. Consider the case of Svante August Arrhenius, whose research revolutionized electro-

chemistry but did not win him an associate professorship because his superiors did not understand his ideas. It took a visit from a brilliant and famous Riga chemist, Wilhelm Ostwald, to explain the importance of Arrhenius's work. Arrhenius won a Nobel Prize for chemistry in 1903, by which time he had left Uppsala and had worked at Stockholm for many years.

Arrhenius's groundbreaking work in physical chemistry was continued at Uppsala by Theodore "The" Svedberg, whose investigations in colloid chemistry have been of great importance in biochemistry and molecular biology. A professor from 1912 until World War II, he also developed a method of making synthetic rubber that proved vital to the war effort. In 1926 he received the Nobel Prize for chemistry. His student Arne Tiselius developed techniques in electrophoresis and chromatography that also led to a Nobel Prize in chemistry (1948).

Not all of the great minds at Uppsala belonged to physical scientists. Nathan Soderblom, humanist and theologian at Uppsala before World War I, received the Nobel Peace Prize in 1930 for his efforts to bring different religious groups around the world into closer harmony.

Those are some of the people of Uppsala. What of the buildings? The castle, built in the 1540s by King Gustav Vasa (the First), was badly damaged by fire and reconstructed in the eighteenth century. Adjacent to the university, the castle is used as an official residence and for limited scholarly pursuits. One of the famous who lived there was Dag Hammarskjöld, whose father was governor of Uppsala County when the late United Nations Secretary-General was a child.

The earliest classes were held in the Chapter House, called Carolinska Akademien, near the cathedral; it served until demolished in the late eighteenth century. Meanwhile, the Gustavianum, named after benefactor King Gustav II Adolph, was constructed in the 1620s and is still used today, fittingly, for the departments of archaeology, ancient history, and Egyptology, and their respective museums.

The Skytteanum, donated by early chancellor Johan Skytte, was also constructed in the 1620s and has been used continuously since that time for the teaching of political science. In 1807 the Botanicum, or Linnean Hall, was built with greenhouses adjacent to Linnaeus's restored botanical gardens. While other buildings were constructed over the next century, the most striking changes in the campus came in the 1970s when the student body had burgeoned from less than 4,500 after the end of World War II to nearly 20,000. The enormous Biomedical Center, the Teknikum for the department of engineering, and the Center for Humanities and Social Sciences were constructed at that time.

The university library, begun with a donation of books and manuscripts from King Gustavus Adolphus in the early 1600s, consists of the main library, Carolina Rediviva, and many branch and departmental libraries. Although it contains many important archival materials,

the most important item is surely the *Codex Argenteus*, or the *Silver Book*. Taken from Prague as war booty in the sixteenth century, the North Italian handwritten translation of parts of the New Testament dates from about A.D. 500.

If it seems that all of the famous alumni and faculty of Uppsala University have been men, there is an explanation: for most of its history, women were not allowed to study or teach there. Not until 1872 was a woman admitted; and not until 1882 was a woman allowed to defend a doctoral thesis. Slowly, more and more women were admitted, but at the turn of the century still fewer than 3 percent of the students were females. The problem was that once women received a degree, there wasn't much they were allowed to do with it. Not until 1923 could they legally teach at the university.

Like many college campuses, Uppsala University has long been home to groups of socially conscious students. A century-old organization of liberals, Verdandi, was formed to offer opportunities for debate between disputing factions. Actively supporting workers' rights and adult education, Verdandi was soon known for its radicalism. Forming libraries, publishing scientific booklets for laymen, and promoting art exhibitions, Verdandi pioneered Swedish adult education. In response, the conservative students formed Heimdal; then the social-democrats began the student society Laboremus. Antagonism among the groups often spilled over into the national political arena until a calm descended in 1915.

However, the politics of the outside world once again intruded on the university in the mid-1930s, when students became concerned that the growing number of Jewish refugees would compete with them for jobs. In 1939, the Student Union took up the matter, in a meeting that was the most heated in its history. Finally, a resolution against granting permits to Jewish refugees was passed by an overwhelming majority, despite the opposition of both Verdandi and Laboremus. The result was embarrassment for the Student Union, since some of the press reported the vote as a victory for Nazi sympathizers. The Student Union responded by removing all Nazi sympathizers from any leading positions they held.

With seven faculties (theology, medicine, arts, social sciences, science, law, and pharmacy), Uppsala University has today about 18,000 students in 150 departments. Slowly, over a period of centuries, the student population has shifted from primarily ruling class to the children of the middle and laboring classes.

An unusual facet of the Uppsala life is the presence of "nations," 13 organizations with their own buildings (including some living quarters), libraries, and social halls for special cultural and leisure events and festivities. Each student is required to belong to a nation, and many of them have connections to scholarships and exchange programs abroad.

Uppsala University reaches out today to all corners of the globe, sharing knowledge and skills with the Third

World. Exchanges with students from England, Poland, the Czech Republic, Greece, and China have been conducted, and American students reach Uppsala through programs with the University of Miami, the University of Michigan, and California State University.

With its roots planted firmly in the Middle Ages, Uppsala University today is branching toward the twenty-first century.

Further Reading: Karin Johannisson's *A Life of Learning: Uppsala University during Five Centuries* (Uppsala: Upp-

sala University Press, 1989) is a scholarly look at the university, illustrated with historic portraits and photographs. "Uppsala University—Younger than Ever After More than 500 Years" is a colorful booklet available from the university. A beautifully illustrated biography of Carl von Linné is Wilfrid Blunt's *The Compleat Naturalist, A Life of Linnaeus* (New York: Viking, 1971), with many references to Uppsala University.

—Jeanne Munn Bracken

VANDERBILT UNIVERSITY

(Nashville, Tennessee, U.S.A.)

Location:	In Nashville, the capital of Tennessee.
Description:	A private university, enrolling approximately 10,000 students in undergraduate, graduate, and professional schools.
Information:	Dean of Undergraduate Admissions Vanderbilt University 2305 West End Avenue Nashville, TN 37203-1700 U.S.A. (615) 322-2561
Visiting:	There are regularly scheduled orientations for prospective students and guides for informal visits. To make arrangements, call the Office of Undergraduate Admissions at (615) 322-2561.

The destructive effects of the Civil War in the United States left citizens in the north and south in search of stability and unity. One person who attempted to heal the sectional wounds was Commodore Cornelius Vanderbilt. A self-made millionaire, who first built an empire in steamboat shipping and then another in railroads, he had the largest fortune in America in the 1870s. A man accustomed to uniting geographic areas through his transportation businesses, he did as much as anyone to bring together the east and west of the newly forming country. In 1873, he wished to help bridge the gap between north and south.

Vanderbilt gave 1 million to Methodist Bishop Holland McTyeire to found a university in Nashville, Tennessee. McTyeire was the leader of a movement within the Methodist Episcopal Church, South, to establish an institution of learning of the highest order. The impetus for such a project went as far back as the 1840s, but the church was stymied first by lack of funds and then by the Civil War.

The endowment of the university was Cornelius Vanderbilt's only major philanthropy. He was influenced to perform this act of generosity by his young second wife, who was from Mobile, Alabama, and was a cousin of Mrs. Holland McTyeire. She knew that her husband wanted to leave a memorial, and she was also aware that in 1872 a charter for "Central University" issued in Nashville to petitioners representing nine Methodist conferences failed for lack of financial resources.

In 1873, McTyeire went to New York for medical treatment and stayed with the Vanderbilts. During the course of that visit, he secured the Commodore's support for the pro-

jected university. Some suspect that there was a fair degree of pre-visit consultation between McTyeire and Mrs. Vanderbilt on how best to convince the Commodore of the worthiness of the project, but accounts are inconclusive. It was known, however, that Mrs. Vanderbilt would sing lovely Methodist hymns to the Commodore, who had never joined a church. He was indeed enchanted by the hymns and deemed the Methodist Church, especially the southern branch, a worthy recipient of his largesse.

Upon receiving the gift, the bishop commented, "A citizen of the North, Mr. Vanderbilt could have found there ready acceptance of his gift and built up an institution rivaling those which abound in that wealthier and more prosperous section of the country; but to the South he looked, and extended to her people what they needed as much as pecuniary aid—a token of good will."

Vanderbilt simply saw the endowment as an extension of his business practices, whereby he endeavored to unite disparate parts of a young nation. Indeed, a year before his death in 1877, he wrote to McTyeire the only recorded statement of his purpose for founding the university: "If [the university] shall, through its influence, contribute, even in the smallest degree, to strengthening the ties which should exist between all geographical sections of our common country, I shall feel that it has accomplished one of the objects that led me to take an interest in it." These words can be seen on the pedestal of Vanderbilt's statue, erected on the campus by the citizens of Nashville.

When Vanderbilt conferred his gift, he insisted upon five conditions. Two of them were crucial to the long-term character of the institution. He insisted that McTyeire run the university as the Commodore himself would run the New York Central Railroad—as an authoritarian, no-nonsense businessman. Since the bishop did not quite have the heart to abandon his ecclesiastical responsibilities to take up this task, a compromise was reached. McTyeire would receive \$3,000 and live on campus in a house constructed for him, and he would assume the very heavy responsibility of exercising veto power over the actions of the self-governing board of trust. Vanderbilt's second critical condition was that the university be located in or near Nashville. Vanderbilt had been scrutinizing his railroad maps and observed that the city was a strategic center with ease of access for the whole region. Memphis and Knoxville had offered sites and even monetary incentives, but when Vanderbilt heard that the church had located its publishing house in Nashville, his mind was made up.

Bishop McTyeire set out to choose a site for the campus, in what was then a city of 40,000 people. He pur-

chased some land about two miles from downtown, and he received other parcels as gifts; the total tract included about 75 acres. He described the site to Commodore Vanderbilt as "west of the city, beautiful for situation, easy of approach, and of the same elevation as Capital Hill, which is in full view." The first structures to go up on the site were ■ main building in a Victorian Gothic style (called "Old Main"), an astronomical observatory, and houses for professors.

McTyeire then looked to Landon C. Garland, a distinguished educator and prominent Methodist layman, for help in the selection of faculty, the arrangement of curriculum, and the setting of policies. Garland consulted with old friends from academia, colleagues such as the presidents of Harvard University and Columbia University, to design an academic blueprint. He was determined that the university, rising out of the ashes of a ruined South, would rival any of the fine universities in the North. Garland, whose primary interests lay in science, was convinced that his aims could be achieved by acquiring the best and most current scientific equipment and by engaging an outstanding faculty. This belief, coupled with Garland's relentless search for the best laboratory equipment money could buy, resulted in Vanderbilt's having the best scientific apparatus in the United States for the first 20 years of the university's existence. Garland also wanted to stimulate large donations from the Methodist Church to supplement the start-up money from Commodore Vanderbilt. He worked tirelessly to construct a program that would satisfy his high educational standards, the proprieties of the church, and the wish for sectional conciliation mandated by Vanderbilt.

Garland and McTyeire decided that the university would be organized into four departments: philosophy, science, and literature; biblical; law; and medical. Garland preferred the system of separate schools similar to that at the University of Virginia, so that each degree program within the four departments was organized under a different school. The faculty Garland and McTyeire assembled was distinguished: five had been college presidents. The 1872 charter was amended in 1873 to make the legal name of the corporation, The Vanderbilt University, and in October 1875, Bishop McTyeire presided over the dedication ceremonies of the new university.

The students, all of them middle-class young men from Southern Methodist families, streamed into "Old Main" in the fall of 1875. There was one exception, however, to the male-only admission requirement: Kate Lupton, daughter of a faculty member, attended classes that very first year and even managed to acquire a degree in 1879. Other women attended classes intermittently until 1895 when the university opened its doors to full-time matriculation of women, a minor miracle in those times for an institution located in the south.

The first decade was rocky. Following Vanderbilt's wishes, McTyeire ruled with an iron hand. Within the first

few years, the original academic and biblical faculties warred with the bishop over several issues, including faculty salaries. By the end of the decade, many full-time faculty had left the institution, leaving McTyeire and Garland the task of once again constructing a staff. The university also had difficulty attracting qualified students, and those who came chafed at the restrictions placed upon them by McTyeire and the stern church elders on the board of trust. There were complaints about the lack of school spirit, the inconveniences of living at off-campus boarding houses, and the lack of amenities.

At the time of Vanderbilt's death in 1877, he believed that his goal of geographical unity was being achieved. He surely could not anticipate that internal dissensions caused the university to all but begin anew in 1887. The academic program was reorganized and admissions policies were changed to allow acceptance only for those who were prepared for authentic college-level work. Garland's beloved model of separate schools was repudiated and the standard class system with courses fitted to class levels was adopted. Graduate programs were established for classical and scientific degrees.

When Bishop McTyeire died in 1889, Garland, who had always been in second place, took over the presidency of Vanderbilt at the age of 79. He launched a campaign to diminish the powers that McTyeire had held, including the president's right of veto about which Commodore Vanderbilt had felt so strongly that he had made it a condition of his financial gift. However, when the board elected a new president, Bishop Hargrove, for ■ life tenure, it retained the power of the presidential veto.

By 1892, Vanderbilt's governance was brought into line with many other universities, by eliminating the role of president (initially created for McTyeire) and making the chancellor the chief executive officer. This act, in one sense, repudiated the Commodore's desire for the president to be analogous to a chief executive officer and for the chancellor to be in an academic policy-making role. In 1893, the board of trust elected a chancellor who was to combine these functions and become the most influential person in Vanderbilt's history, James Hampton Kirkland.

Kirkland found a thriving academic environment. Vanderbilt's Academic Department, bolstered by young faculty with the Ph.D. from German universities, ranked just below those of Johns Hopkins, Harvard, and the University of Michigan in faculty strength. In 1890, the United States Commissioner of Education listed the university as among 12 "which, together with certain of the state universities, approach more nearly the idea of true universities than any other institutions in the country." Vanderbilt's son, William Henry and his grandsons, Cornelius II and William Kissam Vanderbilt, continued to provide funds which supported the construction of new theology, engineering, and science buildings as well as new dormitories. In 1901, Phi Beta Kappa chartered a chapter at Vanderbilt.

Garland died in 1895, leaving a university growing in scope and depth. Unfortunately, things began to decline rather rapidly toward the end of the century. A wholesale flight of faculty resulted from the meager wages that the board of trust refused to increase. The caliber of graduate students was falling and fewer came from northern schools, thus disappointing those who shared Commodore Vanderbilt's dream that the university would bring together students from different sections of the country. The university was also in debt, which meant that Kirkland was struggling with budgets, leaving little time or energy for the task of consolidating the professional schools (law, medicine, dentistry, engineering, and pharmacy), which were mostly in proprietary arrangements with the university. For example, in relation to law and medicine, local physicians and lawyers were responsible, both educationally and financially, for the two schools; the Vanderbilt Board of Trust did little more than sanction the arrangements.

But the new chancellor rallied and in 1901 began to pull all the professional schools under his and the board's effective management. He explored affiliating the George Peabody Normal School with Vanderbilt, using the teacher's college at Columbia University as a model. His vision of a firm affiliation with the Peabody School was not to be realized until some 75 years later.

Only a few years later, however, tragedy struck as, on April 20, 1905, the campus's original building, "Old Main," was gutted in a fire; the casualties included the outstanding chemistry and physics laboratories and the graduate library. The next day William Kissam Vanderbilt donated \$150,000, and alumni and the citizens of Nashville donated funds, toward the reconstruction. The Victorian Gothic gave way to an Italianate style; the fourteenth-century town hall of Siena, Italy, was used as a model for the new structure, to be called Kirkland Hall.

Vanderbilt faced its most difficult period during the early 1900s, when it confronted and ultimately surmounted a crisis in its identity. The university had been carrying out Commodore Vanderbilt's desires for an open institution that would serve to unite geographical areas. The student body was comprised of men and women of different religious denominations from all parts of the country. The bishops of the Methodist Episcopal Church, South, however, felt that the relatively open admissions policy had fostered an institution that had strayed too far from its Christian origins. They were insisting on tighter control of the decisions of the board, a direction which the liberal faculty and student body would not tolerate. In 1914, after years of controversy, which culminated in a lawsuit that went all the way to the U.S. Supreme Court, Vanderbilt University severed its ties with the Methodist Church. Historian P.K. Conkin summarized the reactions to the decision: "Church newspapers lamented a total defeat . . . but the campus was delirious. Kirkland led a march of a reported 1,000 students in downtown Nash-

ville. The celebration reportedly outclassed that following any great football victory. And in educational circles the decision was generally hailed as a victory for higher education and even for academic freedom."

The decision heralded an era of growth in the university's physical plant, but it would soon have to confront the issues of women's roles in the university and the admission of black students. Women had been part of campus life since the beginning, but they really began to play a role around the time of World War I. Enrolled in increasing numbers, women were exerting more and more influence in campus life. They began to enter the professional schools in larger numbers, formed social clubs, served as teaching fellows, and even began to be hired as full-time faculty. These accomplishments were hard won and included facing a series of measures aimed at discouraging their participation in campus life, some of them instituted by Kirkland, who saw Vanderbilt as an institution for men with women only as "guests." Nonetheless by 1929, women comprised 25 percent of the student body and maintained the highest grade-point averages in the university.

There were no black students at Vanderbilt early in the century, but by the end of the 1920s there was a nucleus of faculty members committed to equal rights for blacks, still a very radical position in the south. Interracial forums were held, attracting the ire of many Vanderbilt students and faculty. White resistance to black applicants, especially from alumni, persisted throughout the civil rights era. Black students, however, were admitted beginning in 1953 but under stringent rules and only in isolated cases. The turning point came with the famous Lawson case, which turned the Vanderbilt campus upside down and ultimately opened the door to full desegregation. John Lawson, a black divinity school student during the 1958-59 term, was involved in efforts to peacefully desegregate local Nashville lunch counters. When he refused to terminate his activities upon threats from the city's mayor, then Chancellor Branscomb was pressured to remove Lawson from the university. The divinity school faculty and dean threatened to resign if the chancellor submitted to the mayor's pressure. A compromise was finally worked out, allowing Lawson to receive a degree and reinstating the divinity school staff. Within two years, Vanderbilt was open to full participation by black students.

The Vanderbilt family was still offering its help to the university. In fact, Harold Vanderbilt, three generations removed from the Commodore, had helped hammer out the agreement that settled the Lawson case. As president of the board of trust beginning in 1954, he was the first family member to take an official position with the school. After 1955, Harold Vanderbilt became the primary source of outside income for Vanderbilt.

In the 1950s, Vanderbilt, emerging as a major university, was outgrowing its provincial roots and even merging with other institutions. Oberlin's Graduate School of

Theology moved to Vanderbilt Divinity School; George Peabody School for Teachers was officially made part of the university; and the Blair School of Music joined in the early 1980s.

Additional distinction was added to Vanderbilt when one faculty member and one alumnus were made Nobel Laureates—Professor Earl W. Sutherland Jr. for physiology or medicine in 1971, and alumnus Stanford Moore, who shared the Nobel Prize for chemistry in 1972. Another alumnus, Robert Penn Warren, was awarded three Pulitzer Prizes.

As the years have passed, the university has continued to fulfill Commodore Vanderbilt's original dictum to heal sectional divisiveness by bringing together students from all parts of the country to study together. In the last year of Chancellor Alexander Heard's tenure (1963–82), students came from 50 states and 73 foreign countries. The 1994–95 freshman class was comprised of 47.4 percent women and 16.2 percent members of underrepresented racial groups.

Given its geography, its sectarian conflicts, and the expected sturm und drang of beginning and maintaining any institution, Vanderbilt University has more than ful-

filled the founders' hope and expectation that it become a major southern university.

Further Reading: Vanderbilt University's *The Inauguration of Oliver C. Carmichael and ■ Symposium on Higher Education in the South* (Nashville, Tennessee: Vanderbilt University, 1938) provides insightful essays by academics on the place of Vanderbilt's programs in the present and the future. Robert A. McGraw's *The Vanderbilt Campus: A Pictorial History* (Knoxville, Tennessee: Vanderbilt University Press, 1978) contains archival photos of buildings and students from the university's founding to 1974. Mark Royden Winchell edits ■ series of essays commemorating the English department at Vanderbilt, which fostered a tradition of gifted writers (*The Vanderbilt Tradition: Essays in Honor of Thomas Daniel Young* [Baton Rouge: Louisiana State University Press, 1991]). The most extensive account of Vanderbilt is found in P.K. Conkin's *Gone with the Ivy: A Biography of Vanderbilt University* (Knoxville: The University of Tennessee Press, 1985).

—Marcia Horowitz

VASSAR COLLEGE

(Poughkeepsie, New York, U.S.A.)

Location:	The college sits two miles outside of the small city of Poughkeepsie along the Hudson River, 75 miles north of New York City.
Description:	A coeducational college of 2,250 students offering the B.A. and M.A. in liberal arts.
Information:	Director of Admissions Vassar College Poughkeepsie, NY 12601 U.S.A. (914) 437-7300
Visiting:	Student led tours are available year round. Call the number above for schedule.

Born in England in 1792, Matthew Vassar and his family immigrated to upstate New York in 1796. Finding the local ales there inferior, they decided to import barley corn from England and open a brewery. The business was successful, but after the brewery was destroyed by fire in 1811, Matthew Vassar opened his own brewery. He later diversified his holdings into the whaling industry and became part owner of a whaling fleet. In 1813, he married Catherine Valentine; the marriage produced no children. With no heirs and with a great fortune, Vassar decided to leave a memorial named for himself. During a trip to London in 1845, Vassar and his wife visited the new Guy Vassar Hospital, named for a relative in England who had funded it. Matthew Vassar then determined that his own memorial would also be a hospital.

In 1854 Vassar had a historical meeting with educator Milo P. Jewett. Born in Vermont in 1808, Jewett had studied at Dartmouth College and Andover Theological Seminary, then taught at Marietta College in Ohio. In 1839 he founded a school for women, the Judson Female Institute, in Marion, Alabama. Due to his antislavery sentiments Jewett was forced to leave the south in the 1850s. Vassar's niece, Lydia Booth, who ran the Cottage Hill Seminary for Women in Poughkeepsie, died, and Jewett purchased the school. This brought together Vassar and Jewett, a relationship which led to the development of what has become one of the major colleges in the United States.

Jewett believed that "a rich man should use his property for the glory of God." When Vassar spoke of his plans to build a hospital Jewett's response was "great hospitals are for great cities" and advised Vassar he would make "better use of his money if he threw it in the Hudson River." The

two men decided a better alternative would be to "endow a college for young women which should be to them what Yale and Harvard are to young men."

The chosen site was a former racetrack and fairgrounds stretching along the Hudson River two miles east of the city of Poughkeepsie. On February 26, 1861, Vassar transferred \$408,000 to the board of trustees. Plans were being made for the construction of the campus when the guns fired on Fort Sumter and the Civil War began. Amid the chaotic economy created by the war, ground was broken for the main building on June 3, 1861. At the ceremony the 69-year-old Matthew Vassar raised the first shovel of soil.

Jewett, who was the college's first president, was not present at the ceremonies. He was busy visiting other colleges to gain ideas for designing the curriculum. That year Jewett visited his alma mater Dartmouth, Amherst College, Brown University, Yale University, and the women's college Mount Holyoke. Jewett continued his curriculum research by touring the colleges, museums, and libraries of England and Europe in 1862. Vassar was left at home with the difficulties of building a college during the financial turmoil of war. Slowly, differences of opinion began to develop between the two men. The first was the question of secularization. Vassar wanted the college to be private and nondenominational, but Jewett was determined that it should have a Baptist affiliation. Another difficulty arose in 1863 when Jewett began to push for an early opening of the school. Vassar, in turn, felt the school was not ready for students.

Jewett was an educator who lacked an understanding of the building industry and the problems Vassar was facing. He became suspicious and angry. Making a fatal mistake he wrote a nasty letter about Vassar to one of the board members with five copies going to other individuals. Either on purpose or by mistake one copy fell into Vassar's hands. In it Jewett called the founder "fickle and childish," a man who is postponing the opening of the college to "amuse himself" with his "play thing." Jewett wrote of "plots and counterplots" against himself for the "nasty love of money." Vassar sent Jewett a copy of the damaging letter and closed with his remarks, "You can no longer be useful in your position. The only alternative for me is to ask for your resignation in proper hands without delay. Whatever further communication there may be between us, they must be in writing." Jewett wrote his letter of resignation on April 16, 1864. At a special meeting on April 29 of the board of trustees it was accepted. Jewett was succeeded by John H. Raymond as president of the college. Formerly president of Brooklyn Collegiate



Vassar College

and Polytechnic Institute, Raymond came to Vassar in April 1864 at a salary of \$4,000 per year.

In June, with the completion of the observatory, the college building was structurally complete, but the plumbing and furnishings were not yet finished. The library collection had been started, consisting largely of books purchased by Jewett in London in 1862. Vassar began the Vassar College Art Gallery with the purchase of over 400 oils and watercolors by European and American artists from board member Reverend Elias Lyman Magoon for the price of \$20,000.

Given a free hand with the curriculum, Raymond opted for a strong liberal arts college for women. The new president outlined three major points regarding the college. First, the school would mirror family life or domesticity, especially since the women would board at the institution. Second, the curriculum was to be entirely devoted to the liberal arts, reflecting a college, not a ladies seminary or trade school for bookkeepers. And third, it would maintain high educational standards and not be a cheap imitation of a men's college. He also did away with Jewett's idea of a free college since the high standards of the college would have to depend on paying students. The board of trustees overwhelmingly approved of President Raymond's plan and voted to open the college in September 1865.

Tuition was set at \$350 per year with an additional \$50 for music and another \$50 for art. Nine professors were appointed, plus instructors. Vassar advanced \$25,000 for the first year of operation. The original name of the school was Vassar Female College. Vassar's close friend Sarah J. Hale, the editor of *Godey's Lady's Book*, objected to this name. Hale and Vassar had corresponded frequently over the years regarding the school. At her urging the word "female" was dropped from the name of the college in 1867, and the name became simply Vassar College. The school colors were rose and gray which symbolized the dawn of women's education. The gray represented the intellectual life of women and the rose was the sunlight which was breaking through.

On September 26, 1865, the college officially opened with 353 students. Hannah W. Lyman of Montreal, Canada, who was appointed principal, received an annual salary of \$1,500 plus room and board. Male teachers received a salary of \$2,500 a year but had to rent apartments in the main building. Maria Mitchell, the astronomy teacher, was paid a mere \$800 per year and provided with room and board for herself and her father in the observatory. The inequity of the salaries was obvious, and in 1871 Mitchell won the fight for equal pay for both male and female professors. Mitchell later became the first woman to become a member of the American Academy of Arts and Sciences.

Vassar was seen frequently walking about the grounds of the college. One student described the founder thus: "His face is a perfect sunbeam, he seems entirely happy

and contented to walk over the buildings and nod at all the girls." However, since the opening of the college, Vassar's health had been declining. Now in his 70s, the founder had suffered several minor strokes. By April 1868 he had great difficulty walking or getting in and out of a carriage. He decided to retire from the board of trustees that June. The board opened its meeting at 11:00 A.M. on June 23, the morning of Vassar's second commencement ceremonies. Matthew Vassar, too weak to stand, asked to read his annual address from his chair. As he neared the completion of his speech, the board members saw the notes fall from his hand and the founder slump over in his chair. He died at 11:50 A.M. by the Vassar clock. In his will, Vassar left much of his estate to the college. He allotted \$100,000 for structural repairs, \$50,000 for financial aid to promising students, \$50,000 to the lecture fund, and another \$50,000 to the development of the library and art gallery.

Other women's institutions of higher learning concentrated on seminary teaching or prepared women for clerical employment. The Vassar College curriculum presented the women with a rigorous course of study aimed at elevating the mind. In addition to the required study of English, students took eight semesters of Latin or Greek and four semesters of a modern language. Students had to complete courses in mathematics, physics, astronomy, and natural history. Drawing, painting, music theory, and choral singing completed the education that led to the A.B. degree. Postgraduate studies were offered which led to the A.M. degree. This degree required two years of additional study plus an accepted dissertation.

In 1878 President Raymond died, and Vassar College appointed a Baptist minister, formerly a professor at Newton Theological Seminary in Newton, Massachusetts, Samuel Caldwell, who became Vassar's third president. That same year a young woman, Stematz Yamakama, enrolled as a freshman. Studying at the expense of the Japanese government, Yamakama, class of 1882, became the first Asian woman to receive a degree from an American college.

Caldwell was not a strong president. Vassar College found itself far behind in the competition with new women's colleges, such as Smith and Wellesley, both of which opened in 1875. Neither of those colleges felt it necessary to have a preparatory department, as Vassar did. Possibly they were attracting students who were better prepared for college. Women also had opportunities at coeducational schools, as Cornell University, Oberlin College, and Antioch College had opened their doors to women. Even the Massachusetts Institute of Technology was admitting women to the study of science and technology. Enrollment at Vassar dropped from 415 students in 1871 to 300 in 1883. The alumnae, concerned about the state of their alma mater, blamed the president. A famous visitor concurred in the negative view of Caldwell. In May 1885 Mark Twain visited Vassar and read two stories in honor of Founder's Day. Unhappy with the treat-

ment he received, Twain refused dinner afterward, referring to Caldwell as "a sour old saint."

Due to the complaints from alumnae, the board of trustees terminated Caldwell's appointment in 1885. The next year James Monroe Taylor, a Baptist minister from Providence, Rhode Island, became Vassar's fourth president. His first order of the day was to rework the curriculum. He opened up more electives during the sophomore year and made the junior and senior years entirely elective. In 1887 the all-male board of trustees elected three women from the alumnae association to sit on the board.

Taylor revived construction on the campus. In 1889 the first gymnasium in a woman's college was built. In 1891 and 1892 the first faculty houses were built on Raymond Avenue. In 1893 an ugly addition was made to the main building. Called Thompson Annex, it was better known as "Uncle Fred's Nose" in "honor" of trustee Frederick Ferris Thompson, who endowed it. That same year, John D. Rockefeller donated \$35,000 for Strong Hall, the college's first dormitory. It was named for his daughter, Bessie Rockefeller Strong, who attended Vassar College from 1886 to 1888. Rockefeller, then a trustee, paid for the construction of a classroom building and in 1902 donated \$100,000 in memory of his mother to build Eliza Davison House.

Under Taylor's administration the college raised the level of curriculum, improved its facilities, enlarged the library, and refined its faculty. In many ways Taylor brought the college into the twentieth century, except on one issue. Taylor did not support women's suffrage. Although he supported the education of women, he did not approve of their political activity. While in public, Taylor called himself neutral on the issue of women's suffrage, he made his anti-suffrage sentiments clear in private words and later in public acts. In her biography of Henry MacCracken, Elizabeth Daniels describes Taylor's 1907 exchange with Bryn Mawr president, M. Carey Thomas:

He admitted that he was against any extension of suffrage for men or women. His letter to Thomas was a response to one from her asking if Jane Addams, head of Hull House in Chicago, might come and speak at Vassar on the working woman's need of the ballot. [Note: As early as 1866 feminist Caroline Wells Healy Dall had lectured at Vassar on the subject of women's rights.] He declined, saying that such a speech would be "propaganda" rather than education, and that he could not agree to any propaganda on the campus "in regard to socialist matters . . . questionable forms of missionary effort, and extreme temperance agitators, as well as regarding this question of suffrage."

Despite Thomas's protestations that Addams had been invited to Mount Holyoke, Radcliffe, Smith, and Wellesley, Taylor would not relent.

In 1909 suffragist and Vassar senior Inez Milholland arranged a debate on the issue of suffrage in a college lecture hall. Although Taylor had approved of the debate, he was outraged to learn, after returning from an out-of-town trip, that faculty members had participated. After he disciplined them at a meeting, the faculty argued that Taylor was infringing on their right to free speech. The controversy culminated in a 1912 resolution drawn up by 13 faculty members attacking Taylor for his efforts to keep faculty out of decisions regarding campus life. Taylor, then 65, responded by announcing his plans to retire.

During the six-month search for a new president, faculty had opportunities for open discussion about the policies of the college. They were reorganized under a new committee system and their right to a role in determining educational policies was recognized. Faculty were not the only ones to benefit during this interim. Students became active in self-government, discussing issues ranging from curriculum to the abolition of required daily chapel. For the first time, students were able to see their grades; in the past students were denied knowledge of their grades unless they were in serious academic difficulty. Another first during this period was a formal graduation ceremony. At the behest of the students, graduates at the 1914 commencement wore cap and gown.

Henry Noble MacCracken, a Chaucerian scholar with a Ph.D. from Harvard and the first president who was neither a Baptist nor a minister, was inaugurated as Vassar's fifth president on October 13, 1915. A play, *The Pageant of Athena*, was presented on the occasion. It had been written by a junior, Edna St. Vincent Millay, who was to become ■ protégé of MacCracken, without whose intervention she would not have been graduated from Vassar. Arriving at Vassar at the age of 23, Millay found herself in trouble with teachers and with academic routine. MacCracken, however, recognized her talents and encouraged her creativity. After disobeying an order that she was not to leave the campus—as a punishment for missing two days of school to see Enrico Caruso perform—she was caught, and the faculty voted to expel her. MacCracken overruled the decision, and Millay was graduated with her class in 1917. MacCracken later said that this occasion was the single time in his presidency that he had overridden a faculty decision.

MacCracken remained at the college for 31 years. He saw Vassar through Prohibition, the Depression, and two world wars. During his administration 11 new buildings were constructed, 170,000 new books were added to the library, and the endowment was increased to \$12 million. When he retired in 1946 the new president, Sarah Gibson Blanding, became the first woman president of Vassar. During her administration the first male students studied at Vassar. Although not officially coeducational, the college opened its doors to returning World War II veterans. In 1969 Vassar would become the first of the Seven Sister colleges to admit men.

Vassar College claims many famous alumnae. Edna St. Vincent Millay was the first woman to win the Pulitzer Prize. First Lady Jacqueline Kennedy Onassis attended Vassar as did Academy Award-winners Jane Fonda and Meryl Streep. The first Vassar alumna to become a Rear Admiral in the U.S. Navy was Grace M. Hopper, who was coinventor of the COBOL computer language. Rick Lazio, class of 1980, became a New York congressman. Writers and poets who went to Vassar include Elizabeth Bishop, Muriel Rukeyser, Eleanor Clark, and Lucille Fletcher.

Vassar College became the subject of a best-selling novel and a major motion picture. In 1963 Mary McCarthy, class of 1933, published the book *The Group*. Banned in several countries for its sexual explicitness, the novel follows the lives of eight Vassar women from their graduation in 1933 to the beginning of World War II. Following the careers, loves, and political activism of a college clique, the book outraged some of McCarthy's classmates. McCarthy neglected to change some first names, and certain character attributes were so obvious to classmates that the author was threatened with legal action. The book remained on the bestseller list for two years, was made into a movie in 1966, and has sold over 5 million copies.

The Vassar College of today is no longer the Vassar of Mary McCarthy's day. Maids, waitresses, and dining rooms have been replaced by the All College Dining Center where food is served cafeteria style. The century-old

commencement ceremony of the Daisy Chain—sophomore women in white dresses bearing ropes of daisies ahead of graduating seniors—is now mixed with sophomore men in blazers and white slacks.

Today the school is racially and economically mixed, with 20 percent of students representing minority groups, and 60 percent of the students receiving financial aid. No longer a wealthy girls' college, Vassar has students from diverse backgrounds, representing every corner of the United States and 30 other countries. Over 90 percent of the students accepted are from the top quarter of their high school class, and 80 percent of Vassar graduates received advanced degrees five years after graduation.

Further Reading: James Monroe Taylor, Vassar's fourth president, provides an excellent history of Matthew Vassar and Milo Jewett as they planned the college in *Before Vassar Opened* (Freeport, New York: Books for Libraries, 1972). This same period, 1845–65, is also covered in Edward Linner's *Vassar: The Remarkable Growth of a Man and His College 1855–1865* (Poughkeepsie, New York: Vassar College, 1984). A chronology of Vassar College by Dorothy Plum, called *The Magnificent Enterprise: A Chronicle of Vassar College* (Poughkeepsie, New York: Vassar College, 1961), covers the origins of the college up to 1961.

—Patrice Kane

VISVA-BHARATI UNIVERSITY

(Santiniketan, West Bengal, India)

- Location:** Visva-Bharati University at Santiniketan is part of Bolpur town in the state of West Bengal. One hundred sixty kilometers from Calcutta, it is located in Birbhum district which is a rural part of the state.
- Description:** A largely residential university, Visva-Bharati has two campuses, at Sriniketan and Santiniketan. It is also a central university, receiving funds from the federal government. It has 13 departments or institutes of study, the best-known ones being the Institute of Fine Arts (Kala Bhavan) and the Institute of Music and Performing Arts (Sangit Bhavan). Visva-Bharati also has a large collection of manuscripts in various languages, including Tibetan and Persian.
- Information:** Visva-Bharati University
P.O. Santiniketan
Distt. Birbhum
West Bengal 731 235
India
(03463) 52751-6
- Visiting:** Write to the Office of the Registrar or to the Public Relations Officer at the address mentioned above for further information. Visva-Bharati is closed on Wednesdays.

The sight of schoolchildren attending classes in the outdoors, under the shade of trees is the first clue that Visva-Bharati is not the average, conventional university. Although the buildings and infrastructure reflect the financial shortages common to all Indian universities, and though the curriculum has gradually been conventionalized over the years, the university still differs in many respects from its peers elsewhere. Visva-Bharati grew out of a school that the Indian poet and Nobel laureate, Rabindranath Tagore, established at Santiniketan in 1901. Based on the ancient Indian tradition of education, the school was Tagore's experiment in reviving an old educational tradition that stressed simple living, creativity and self-expression rather than rote learning and dull lessons. In its time, the school was a unique departure from the stultifying education that Indian children received elsewhere.

Rabindranath Tagore's influence is pervasive in Visva-Bharati University. Born into the well-known

Tagore family of Calcutta, Rabindranath had a great advantage over other creative artists—family support and encouragement. His grandfather, Dwarkanath Tagore was a highly successful businessman and he also supported the Brahmo Samaj, the early nineteenth-century Hindu reform movement in Bengal. Rabindranath's father, Debendranath Tagore continued Dwarkanath's contributions to cultural activity in Calcutta. A leading activist in the Brahmo Samaj, he was also an outspoken advocate of education as a vehicle to social reform. As part of his religious activities, Debendranath founded a meditation center at Santiniketan in 1863. It was here that Rabindranath began the open-air school called the Brahmo Vidyalaya in 1901.

Rabindranath's poetic genius surfaced early in his supportive family environment. He had already produced quantities of verse, before his family sent him to England in the late 1870s for education. Tagore disliked the highly (and to his mind, narrowly) structured format of British education and returned home. In 1882, his collection of verses, *Sandhya-Sangeeta*, earned critical praise and announced the arrival of a new talent on the Bengali literary scene. In 1891, Rabindranath's father handed over charge of the family estates in East Bengal (present-day Bangladesh) to him. Tagore's creativity blossomed in the lush green countryside of Shilaidah and Shazadpur. His houseboat Padma (named after the grand river of the region) allowed him to travel extensively in both business and creative journeys. In this period, Tagore produced many short stories that drew on the Bengali countryside for themes and images. His famous collection of poems, *Sonar Tari (The Golden Boat)*; 1894) and the play *Chitrangada* (1892) also date from this period. At the Tagore estate in Shilaidah, Tagore ensured that his children were spared the stifling influence of the prevailing education system. He arranged for live-in tutors to teach his children English, mathematics, and science. He himself instructed them in Bengali and the Indian classics. In 1892, he made his criticism of the education system public in an article in the magazine, *Sadhana*. He also stated that for education to be effective, the medium of instruction should be the native language of the students.

Once Tagore decided to translate his views on education into practical action, he busied himself with the establishment of the school at Santiniketan. He believed that nature and natural surroundings greatly aided education. Unable to find such institutions around him, Tagore found his model in the ancient Indian schools or Gurukul system where students and teachers resided together, and where education was a continuous experience rather than a sepa-

rate segment of a child's life. The school opened with five students, one of whom was Tagore's son, Rathindranath. Despite the initial difficulties, the school endured. The curriculum emphasized simplicity in externals, to the point of austerity. The students—all boys initially—were required to wear simple yellow clothes, eat vegetarian meals, and sleep in a starkly bare dormitory. The cultural life of the place made up for the lack of physical comfort. Students were encouraged to participate in musical *soirées*, plays, and to express themselves through art and music. Tagore himself wrote many of the plays that the teachers and students performed at Santiniketan. This culture of participation and artistic expression distinguished Santiniketan from other schools even in its earliest days.

Despite the simplicity of life at Santiniketan, the school was a great financial burden on Tagore. The school was supported entirely out of the initial endowment and subsequently, Tagore's personal funds. Along with the crushing problems of administration, Tagore also endured a series of personal tragedies. In 1902, his wife died; nine months later, Tagore also lost a young daughter to tuberculosis, and in 1907, his youngest son to cholera. The experiment at Santiniketan continued however, as did the poet's literary output. These latter were now tinged with sadness and had a deeper, more reflective quality about them. Acting upon the advice of his doctors, Tagore retired to Shilaidah to recover his health, which he had strained greatly, nursing his wife and children in their long illnesses. In the solitude of his beloved Bengali countryside, he translated some of his poems into English. These were the poems that he took with him to England in 1912 and which took the literary world there by storm. Tagore befriended the poet W.B. Yeats and the artist William Rothenstein. *Gitanjali* (Song Offerings) became his best-known collection of poems in England. In 1913, he received the Nobel Prize for literature. The world travels generated by the post-Nobel recognition brought Tagore into contact with many different world cultures, including Japan in 1916. He also became close to the French philosopher Romain Rolland. On his return to India, Tagore set about creating a center for the study of various world cultures with the aim, in his own words, "to seek to realize in a common fellowship of study the meeting of the East and the West, and thus ultimately to strengthen the fundamental conditions of world peace through the establishment of free communication of ideas between the two hemispheres." Visva-Bharati University thus came into being at Santiniketan and registered itself as a public institution in December 1921.

In the years following, Santiniketan developed rapidly as an unconventional university and a unique center of learning. The children's school remained but it was now merely a part of many different activities on a campus that was now filled with people. Students from across the country flocked to Visva-Bharati. In 1923, Uttar Vibhaga, or the Department of Higher Studies began with the mis-

sion of generating knowledge about the different cultures of the world. Besides Bengali and Hindi, German, Latin, and Persian were part of the choices offered to students. Tagore's international reputation attracted many foreign scholars to Santiniketan. The French Indologist, Sylvain Levi came here as did the Italian scholar Carlo Formichi. Various departments and institutes sprang up as the university expanded. So, in 1937 a Sino-Indian Studies Institute or Cheena Bhavan came into being and in 1948 a Teachers' Training Center was established. Among the famous students at the university in the interwar period was the late Indian prime minister, Indira Gandhi.

The best-known feature of Visva-Bharati remained its active and rich culture of arts and music. Already before 1921, Tagore had drawn to Santiniketan a host of Bengal's most talented artists, including his cousins Abanindranath and Gaganendranath Tagore, Nandalal Bose, and Surendranath Kar. All of them contributed to the collegial atmosphere at Santiniketan in which young painters found immeasurable support and encouragement. Founded in 1922, the department of fine arts, Kala Bhavan, separated into two schools in 1934, one for fine arts and the other for music. To this day, Visva-Bharati is considered a leading center for the fine arts. Kala Bhavan offers degrees in sculpture, art history, and design among others. The department of music, dance, and drama, Sangit Bhavan, keeps alive the tradition of Rabindra-sangit, the music centered around Tagore's poetry and dance-dramas. It also offers training in the north Indian school of classical music. Visva-Bharati's rich repertoire of performance and fine arts reveals itself in the annual fair—the Pous Mela—that takes place every December to mark the foundation of the original retreat by Debendranath Tagore. Troupes of students present song and dance from all regions of the country and thus keep alive Rabindranath Tagore's dream of education through intense cultural activity rather than rote learning.

Tagore was above all a humanist and an internationalist. He was also in his own way, anti-imperialist. Gandhi's favorite song was one composed by Tagore, "If no one heeds your call, then walk alone, walk alone." In 1919, as a protest against the British army's firing on an unarmed crowd in the city of Amritsar—that left over 300 dead—Tagore resigned the knighthood that the British had conferred on him. Still, he did not always agree with the methods of nationalists. Against those who called for boycott of the foreign-made goods that had paralyzed the Indian economy, Tagore called for a simultaneous revival of rural industry and crafts. Mere boycotting of goods and services was, according to him, a negative act that contributed nothing to the alternative, noncolonial culture that India should aspire toward. Tagore's ambivalence to nationalist strategies earned him many critics in activist circles. At Santiniketan, Tagore tried to express his feelings about the idea of proactive rural work through the institution of a Rural Reconstruction Institute or Palli

Samgathana Vibhaga. Set up in 1922, the Institute achieved modest results till independence. Currently, it has an active rural outreach program, emphasizing literacy, health care, and cottage industry.

Rabindranath Tagore died in 1941. Ten years later, Visva-Bharati, to which he had contributed not only his aura but also almost all his personal finances, was declared “an institution of national importance” by the Indian parliament. Since then, it has been supported from central funds. The university curriculum now reflects far more mainstream concerns (such as degrees and formal courses of study) than during the time of Tagore. However, the emphasis on arts and music makes its campus activities unique. The university also maintains a center on Tagore, Rabindra Bhavan, which is a major research center for Tagore Studies scholars. Tagore’s residences at Santiniketan—such as Udayan, Konark, and Udichi—are also part of the campus. Their beautiful gardens are a distraction from the ugliness of overdevelopment that has currently overwhelmed Bolpur and Santiniketan. Equally charming are the children of Visva-Bharati’s campus schools, sitting in their yellow uniforms under shady

trees, learning their lessons, presenting a reminder of simpler days when Tagore’s vision of the “cooperative enthusiasm of teachers and students” had seemed more easily attainable.

Further Reading: All works on Tagore’s life deal with the establishment of Visva-Bharati. A good overview of Rabindranath Tagore’s life and literature by one of his contemporaries is *Rabindranath Tagore, His Life and Work*, by Edward John Thompson (New York: Haskell, 1974). A more recent work is *Rabindranath Tagore*, by Mary M. Lago (Boston: Twayne, 1976). The journal of Visva-Bharati University, *The Visva-Bharati Quarterly* (Santiniketan), is available in many university libraries and provides a good entry point into campus activities. An insight into the more personal aspects of life at Santiniketan and the personal choices of Tagore are available from the poet’s son’s reminiscences: see *On the Edges of Time*, by Rathindranath Tagore (Westport, Connecticut: Greenwood Press, 1958).

—Sharmishtha Ray Chowdhury

WASHINGTON AND LEE UNIVERSITY

(Lexington, Virginia, U.S.A.)

Location:	In western Virginia, in the valley between the Appalachian, Allegheny, and Blue Ridge Mountains, in rural Lexington.
Description:	A private university enrolling approximately 2,000 students in undergraduate and professional schools.
Information:	Office of Admission Washington and Lee University Lexington, VA 24450 U.S.A. (703) 463-8400

Consistently, Washington and Lee University has been ranked among America's top 25 liberal and law schools by *U.S. News and World Report*. In the category of faculty resources, the institution is considered number one nationally. With an excellent reputation and a small student/faculty ratio of 9/1, Washington and Lee has earned itself a place in the top tier of U.S. liberal arts schools.

This impressive academic reputation has evolved over a period of 250 years and has been the result of contributions made by two famous Americans. Five years before the French and Indian War of 1754–63, Washington and Lee's predecessor, Augusta Academy, had been founded near Lexington, Virginia by resolute Scotch-Irish Presbyterians in search of a classical education for their children. The ideology of the American Revolution influenced the small school which, in 1776, changed its name to Liberty Hall Academy and sought to emulate the ambitious curriculum offered at Princeton.

After independence had been achieved, however, the academy struggled. In 1796, George Washington, preparing to enter his long-delayed retirement at Mount Vernon, saved Liberty Hall Academy from extinction. At the urging of friends associated with the school, the president gave Liberty Hall a major endowment gift (the largest at that time, ever given to any American educational institution) of \$50,000 in James River Canal stock. In gratitude, the trustees changed the school's name in 1798 to Washington Academy. Five years later, it moved to nearby Lexington.

The institution's history was heavily influenced by George Washington's early generosity. While physically not present on campus, Washington shielded, in a sense, the school from the fierce battles which occurred between Jefferson and Hamilton and the resulting birth of the two-party political system. Washington Academy weathered

those storms and also the War of 1812 which, despite the best efforts of American propagandists, was considerably less than a victory for the United States.

By 1813, the academy had grown sufficiently to become a college. Despite being chartered by the commonwealth of Virginia in 1782, Washington College was unique among southern colleges in that it had no official relationship with either a church (as in the case of the University of the South) or state (as with Virginia Military Institute, founded in Lexington by the state in 1839). Therefore, Washington College's first century was influenced by the stability of its namesake, a man who cautioned against entanglements—foreign and domestic.

The school's second 100 years began on a bleak note. The Civil War wrecked the valley of Virginia, stripping farmers of their crops and disillusioning a generation of southerners who had embraced the flawed tenets of the Lost Cause. The college's classrooms had emptied in 1861 when students enthusiastically rallied around the Confederacy. An 1864 raid by Union General David Hunter, and subsequent occupation of the campus by Federal troops, turned the initial enthusiasm concerning the war into a flood of despair.

In the final months of the conflict, Washington College deteriorated with regard to its physical plant (e.g., wrecked library, shattered laboratory, splintered classrooms) and its pitifully small student body. Four professors taught 40 boys who, all under military age, came to class sporadically as the south's military effort collapsed. By war's end, Washington College had become, once again, sort of a preparatory school—a far cry from what it had been only five years earlier.

Financially, the college had, amid the exhilaration of 1861, invested unwisely in the Confederacy. Upon General Robert E. Lee's surrender, the school had \$2,458.20 in worthless Confederate currency and a considerable amount of equally worthless southern bonds. Once again, George Washington's 1796 endowment saved the school but, until the state legislature met in December, the college existed in somewhat of a quandary. While the 1796 gift's value had increased to \$94,000, this endowment was snarled in the uncertainty associated with the death of the Confederate States of America.

The trustees were not discouraged. They sought to borrow \$500 to reopen the school for the fall 1865 semester. Rejected, the trustees decided, in a peculiar display of logic, to apply for a larger loan of \$4,600 based on the reasoning that amid the terrible destruction the war larger—instead of smaller—loans had better chances of gaining approval. Additionally, the board of trustees



Washington and Lee University

passed this motion: "Resolved, that a committee of three be appointed to wait upon the Commandant of the Federal forces now at Lex. and ask that the college buildings be at once vacated by the troops."

Therefore, Washington College, a school with more than 100 years of success, stood in late 1865 perilously near the edge of bankruptcy with a campus occupied by northern troops who showed no sign of desiring to vacate the premises. Additionally, the college had no president since the prewar chief executive had been driven from town because of his Union sympathies.

At a crucial trustees' meeting, the board pondered the presidential search. Several names were discussed and then, in a dramatic moment, one trustee mentioned that General Robert E. Lee's daughter, Mary, had confided that the defeated commander needed a job. The suggestion is noted in the board records thusly: "Then various members of the board said what a great thing it would be for the col-

lege if the services of General Lee could be secured, and wondered if there was any chance of doing so."

Within minutes, and without Lee's knowledge, the trustees had found a new president. Judge John Brockenbrough, board chairperson, was appointed to carry an official invitation to the general. Some board members wondered if Lee would accept the presidency of a "broken-down college."

Wearing a borrowed suit, Judge Brockenbrough, with borrowed funds, met with Lee at Lee's borrowed Richmond home. Surely, the symbolism of the moment painted a dismal portrait of the south in the months following Appomattox. A destitute judge offered a defeated commander the presidency of an all-but-closed college.

Brockenbrough's offer was a modest one. Lee would receive a house, garden, percentage of tuition, and \$1,500 a year. As the general considered the proposal he thought of 1852 when he had tried earnestly to refuse the superinten-

dency of West Point. Agriculture—not education—was the pathway he wished to follow now that the war was over.

Three words, “Duty, Honor, Country,” had guided Lee since his student days at West Point. These words had caused him to reject command of the Union forces in early 1861 and accept the leadership of the Army of Northern Virginia. It had been *duty* to his native state which had motivated him for four long years. Now, it would be *duty* to Virginia, to rebuilding a small college in Virginia, which would influence Lee’s decision.

One of Lee’s friend, William Nelson Pendleton, and Episcopal rector and former Confederate general, wrote Lee:

One great reason why I hope you may judge favorably of this invitation is, that the destiny of our State and Country depends so greatly upon the training of our young men. And now our Educational Institutions are so crippled that they need the very best agencies for their restoration and the revival of high aims in the breasts of Virginian and Southern youths.

After three weeks of contemplation, Lee conditionally accepted the Washington College presidency. He explained to the board that his personal situation might, unfortunately, become like that of the imprisoned Jefferson Davis. He also warned the trustees that he feared “my occupation of the position of President might draw upon the College a feeling of hostility.”

Still, the board stressed in its reply, Robert E. Lee was their choice to guide Washington College. Five months after Appomattox, Lee, because of his perception of duty, became president of an institution he had never visited. Immediately, he began to call for “the healing of all dissensions.”

Lee’s five-year tenure at Washington College was characterized by increases in student enrollment (from 40 to 400), financial stability, teacher recruitment, a modern honor code, a revitalized curriculum, the birth of a national fraternity (Kappa Alpha Order) which considered Lee its spiritual founder, and an overpowering sense of sectional reconciliation. According to one account, Lee daily passed

a Lexington home with a shattered oak tree in front, a casualty of war. The tree’s owner, a woman who daily greeted Lee as he walked by the tree, criticized the Union soldiers who had splintered the oak. Finally, Lee, in his softspoken manner, advised “Ma’am, just cut the tree down.”

The Lee years saw the establishment of the country’s first journalism program and, in 1866, a law school began. Students from 20 states and 1 foreign country came to the school and, by Lee’s death in 1870, the school had surpassed its prewar prosperity to become national in character.

A year after Lee’s demise, the institution was renamed Washington and Lee College, honoring “in fit conjunction” the two generals. Both men personified a commitment to “duty, honor, and country.” Despite a late nineteenth-century struggle, those potent three words guided the school into the present century. Washington and Lee’s Law School became coeducational in 1972 with its graduate programs and the inclusion of women undergraduates occurred in 1985.

Since 1983, Washington and Lee University has been led by John D. Wilson, who, in the style of General Lee, presides over a school which has earned a national reputation. Rhodes Scholars have been chosen, on average, every third year since 1970. The ranking by *U.S. News and World Report* and other publications attests to the emphasis placed by Lee, Wilson, and other university leaders on providing students an educational experience deeply rooted in “duty, honor, and country.”

Further Reading: For two useful treatments of the importance of George Washington in the formative years of the Republic, see Douglas Southhall Freeman’s *George Washington* (New York: Scribner, 1956) and Marcus Cunliffe’s *George Washington: Man and Monument* (revised, New York: Penguin, 1982). A good study of Lee’s role in saving the college is Emory Thomas’s *Robert E. Lee* (New York: Norton, 1995).

—Joseph Edward Lee

WASHINGTON UNIVERSITY (Saint Louis, Missouri, U.S.A.)

Location:	In the Forest Park neighborhood of northwestern St. Louis.
Description:	An independent university that enrolls approximately 11,500 students in its undergraduate, graduate, and professional programs combined.
Information:	Washington University Office of Undergraduate Admissions 1 Brookings Drive Campus Box 1089 St. Louis, MO 63130-4899 U.S.A. (314) 935-6000

State Senator Wayman Crow of Missouri was the first great patriarch of Washington University. He drafted by himself a charter for a tax-free educational institution to be located in St. Louis, and he brought the document to his fellow legislators in the form of a bill. The charter was signed into law by Governor Sterling Price on February 22, 1853, even before Crow had informed William Greenleaf Eliot, a Unitarian minister, that the new institution was to be named "Eliot Seminary" in his honor. Indeed, it was only after the law was enacted that Eliot and 15 select members of his congregation learned that Crow had listed them as incorporators of the seminary, along with himself. The incorporators, or trustees, were somewhat daunted by the task to which Crow had magisterially assigned them, for St. Louis was at that time still a young city on the edge of America's western frontier. Years later, Eliot wrote: "It took us quite by surprise . . . for none of us had dreamed of such a thing, and an educational institution seemed quite beyond our strength."

The name of the seminary was changed three times before the trustees settled on "Washington University." Apparently too modest to accept Crow's generous homage, Eliot directed that the seminary operate under the name of the "Washington Institute of St. Louis," and in 1855 legislation was drafted to adopt that name legally. However, a charter for a Washington College in St. Louis was enacted that same year, and so the trustees withdrew their proposal. According to university records, some "unauthorized parties" then introduced legislation to change the seminary's name to Lafayette Institute, but the bill was halted at the governor's desk by a telegram asking him to veto the proposal. The trustees then agreed to

the title of the O'Fallon Institute, in honor of Colonel John O'Fallon, who donated the first plot of land acquired by the seminary. However, plans for the Washington College fell through that same year, and so O'Fallon requested that his name not be used. Finally in 1858, the name Washington University was officially assumed in an amendment to the school charter.

Washington grew rapidly, despite financial strain and major setbacks suffered during its first several years of operation. The O'Fallon Polytechnic Institute opened under the auspices of the university in 1855 and was scheduled to be moved soon after into a spacious new building on the corners of Chestnut and Seventh in downtown St. Louis. However, primarily because of financial hardship brought on by the Civil War, the construction was not completed until 1866, and its total cost, combined with the expense of operating the polytechnic itself, proved too much for the young university. Both the polytechnic and the five-story building were temporarily assigned to the public school system in 1868. More favorable events during the same period included the construction in 1856 of the university's first building, Academic Hall, at the corner of St. Charles and Seventeenth Streets, and the opening of the scientific department in 1857, the forerunner to the modern school of engineering.

Washington evolved into a complex university between the time of its foundation and its move to the famously well-designed Hilltop Campus in 1905. The law school opened in 1867, having retained a highly qualified faculty including two state supreme court justices. The first woman was enrolled in the school five years later, following the decision in 1869 to make Washington the first institution in the nation to accept women into a law program. In 1891, the university acquired the formerly independent St. Louis Medical College, which was united with the Missouri Medical College eight years later, thus forming the Medical College of Washington University. In 1892, Washington incorporated the Missouri Dental College. The school of fine arts opened in 1879, the Henry Shaw School of Botany in 1885, the school of architecture, and the school of engineering in 1902.

The downtown campus was crowded and worn by the early 1890s, and the trustees began to consider a move. In an unpublished history of Washington University, the late Dean Alexander Langsdorf described the university's buildings as suffering from "dusty wooden floors, numerous partitions of tongue-and-groove lumber added as afterthoughts . . . and lighting fixtures so inadequate by modern standards as merely to punctuate the gloom of



Washington University

dark winter afternoons.” Thus, in 1893 the board of directors passed a resolution floated by Henry Eliot, son of William G. Eliot, to move the university’s colleges and the polytechnic to a new location. The university was financially prepared to accomplish the move thanks largely to the generosity of Robert Brookings and Samuel Cupples. Brookings retired from business and joined Washington’s board of directors in 1891, having decided to devote his full energies to improvement of the university. He may be considered the second great patriarch of Washington. Not only did he lead a successful fundraising campaign, but Brookings and Cupples donated half of their holdings in Cupples Station properties to Washington, the sum valued at several million dollars.

The new campus was carefully and slowly planned. In 1894, the university purchased 103 acres of land in northwestern Forest Park, then a nearby suburb northwest of St. Louis. While the location seemed rather remote, the trustees recognized the potential for growth of the area. A preliminary site plan was drafted by the landscape

architectural firm of Olmsted, Olmsted and Eliot. The Olmsted brothers pointed out that the university would be deleteriously confined unless 50 additional acres abutting the southern border of the original site were purchased. Indeed, their plans all presumed ownership of such an extension, although no further land was actually secured until 1899. Washington then staged a limited competition for the design of the Hilltop Campus, in keeping with the plans drawn up by the Olmsteds. The university organized a building committee, the members of which drafted guidelines for a limited architectural competition. Plans for at least the first seven buildings to be raised on the new campus were to be included in the winning design.

Six of the most prestigious architectural firms in the country were invited to participate in what turned out to be a competition of some national interest. In October 1899, a jury of eight declared Cope and Stewardson of Philadelphia the winners, but unfortunately there is no record of the members’ deliberations or the basis for their decision. They were likely impressed by the way that Cope’s plan

(Stewardson died in 1896) abandoned the rigid classicism dominating each of the competing proposals, and by the way that Cope's block plan could gracefully accommodate future building on campus in varied architectural styles. One of the jury members later commented on the fact that Cope's design harmonized with the natural contours of the land and thoroughly considered the special needs of each building and its departments.

The first six buildings that Cope designed were under construction by 1900. They were all long, narrow Tudor Gothic works constructed of red Missouri granite and Bedford stone. None was more than three stories high, except the small towers adorning several constructions. These horizontally oriented buildings were arranged around a series of interconnected courtyards, modeled upon the layouts of Oxford and Cambridge Universities. University Hall (later renamed Brookings Hall) served as the main entrance to the new campus, as it still does today. Its great length is divided by an arched breezeway, guarded by two gargoyles, that opens upon the inner courtyards.

Robert Brookings exercised his business acumen to partially fund the construction of the new plant. The United States hosted the World's Fair in 1902, and the Louisiana Purchase Exposition was held in Forest Park. Brookings took the initiative to lease the new university buildings to the fair's management for the considerable sum of \$750,000. By a happy coincidence the first Olympic Games ever held in America were staged on the university's new Francis Field that same year. Thus, the Exposition events literally ran abreast the 38 athletic competitions taking place on Washington's virgin campus. When the festive events finally came to an end, the university resumed construction, and, by 1910, there were 12 buildings on campus, all constructed in the Gothic style of Cope's original plan.

Washington's Hilltop Campus is widely considered one of the most beautiful in the country, with modern additions carefully planned to harmonize with Cope's design. Murphy and Mackey, the architects of the Olin Library, located two of the library's floors underground in order to retain visual proportions commensurate with the older buildings. When the university embarked on a \$63-million expansion project in 1957, dormitories were constructed on a newly acquired site known as the South Forty, which is connected to the main campus by an underpass. All of the old dormitories were then converted to academic buildings, thus affording the university badly needed facilities, while preserving the original campus.

Washington quickly grew in size and stature following the move to Forest Park. Ten new buildings were raised between 1923 and 1927, and a record number of 7,895 students enrolled during the academic year 1926-27. The medical school was almost immediately transformed into one of the nation's finest, following its dramatic restructuring in 1910. That year, Abraham Flexner published a

report on the state of medical education in America under auspices of the Carnegie Foundation for the Advancement of Teaching. Even before that report was available to the public, word reached Brookings that Flexner looked very dimly upon Washington's medical school. Brookings went to New York and brought Flexner to St. Louis, where he then observed operations at the medical school and offered advice on how it might be bettered. The creation of some of the nation's first full-time professorships of internal medicine, surgery, and pediatrics were among the changes that vastly improved the quality and reputation of the medical program.

During this same period of growth, the university suffered a rather honorable loss. In 1923, Brookings organized the Graduate School of Economics and Government, which was to award doctoral degrees. However, Brookings's plan for students to spend a year in Washington, D.C. proved unfeasible. The university's tax-exempt status had been granted by the Missouri legislature and applied only so long as the corporation operated within the state. Thus, the school splintered off from Washington to become the prestigious and still respected Brookings Institution.

Chancellor George Throop, who served from 1927 until 1944, adeptly guided the university through both the Great Depression and World War II, a period in which most of the university struggled under financial hardship. The medical school achieved an astounding record for seminal research during that otherwise difficult era, however, thanks to the changes instituted by Brookings. In 1933, Professor Evarts Graham performed the first successful lung removal on a cancer patient, and he then won the prestigious Lister Medal for surgery in 1942. In 1943, Dr. Edward Doisy, formerly on the school's faculty, received the Nobel Prize for physiology or medicine. The next year, Dr. Joseph Erlanger, then on the faculty, and his associate Dr. Herbert Gasser, formerly on the faculty, won a Nobel Prize in the same area for their research on neural transmission. In 1947, yet another Nobel Prize in physiology or medicine was shared by Carl and Gerty Cori, both on the medical school faculty, for their research on the processes by which glucose and glycogen can be transformed each into the other.

Not until after the end of World War II did the university embark on any serious improvement projects beyond the medical school. Chancellor Allen Shepley, who served from 1953 until 1961, raised professors' salaries to a competitive level, thus allowing Washington to retain a first-rate faculty. Then under Chancellor Eliot, 1962-71, the university launched a highly successful fundraising campaign. Those efforts had a considerable effect, for in 1966, the Cartter Report ranked Washington's graduate programs among the top 25 in all of the United States. However, it was during the chancellorship of Henry Danforth, who served from 1971 until 1995, that Washington took its place among America's best research institutions. In

1995, *U.S. News and World Report* magazine ranked Washington 20th in the United States, and in the same year, the National Research Council ranked eight of Washington's doctoral programs in the top ten. Just 13 years earlier, only one program was so highly rated. Mark S. Wrighton, who became Washington's chancellor in October of 1995, came to be in charge of one of the best endowed and best equipped universities in the country.

Further Reading: An interesting history of the Hilltop Campus can be found in *Washington University in St. Louis: Its Design and Architecture*, by Buford Pickens and Margaretta J. Darnell (St. Louis, Missouri: Washington University, 1978). Several brief articles outlining the history of the university can also be found in the spring 1973 issue of *Washington University Magazine*.

—Christopher Hoyt

WEIZMANN INSTITUTE OF SCIENCE (Rehovot, Israel)

Location: Rehovot, Israel, 15 miles southeast of Tel Aviv.

Description: A research and teaching institute of approximately 2,300 researchers, engineers, technicians, and scientists-in-training. The campus is also home to the Feinberg Graduate School, with an enrollment of approximately 800 students.

Information: The Weizmann Institute
Office of Admissions
Rehovot 76100
Israel
(972) 8 343111

Founded by statesman and scientist Chaim Weizmann, the Weizmann Institute of Science stands as one of Israel's foremost interdisciplinary centers of learning, with a history directly connected to its founder and namesake. Born into a family of 15 in Czarist Russia, Chaim Weizmann was 17 years old in 1891 when he left his homeland and its anti-Semitic university quotas to pursue studies in Germany and Switzerland. Weizmann earned his Ph.D. in chemistry nine years later in Fribourg, Switzerland.

A natural leader, who, in 1916, came to head the Zionist movement, Weizmann realized his two most ambitious goals when he was named the first president of the state of Israel and the first president of the Weizmann Institute of Science. His prominence as a statesman was established when Weizmann was recognized as a key negotiator of the pact known as the Balfour Declaration, a document that officially sanctioned a national homeland for the Jewish people. In his capacity as a statesman, he headed the Zionist Commission to Palestine and as such played a major part in the 1929 establishment of the Jewish Agency for Palestine.

Weizmann's career as a scientist led to his distinction as a Zionist leader. As a research chemist living in Manchester, England, he invented a process that produced acetone from maize, and in so doing contributed to the production of the smokeless gun powder, cordite, used by the Allies during World War I. In the years preceding World War II, buoyed by the British pledge of a Jewish homeland, Weizmann moved to Palestine. No stranger to the world of academia, Weizmann, a founder in 1918 of the Hebrew University in Jerusalem, sought to combine the scholastic with the scientific in a setting connected with both the past and future of the Jewish people.

The Weizmann Institute of Science, initially named the Sieff Institute, saw its beginnings in 1933, a year when Nazism was becoming an international threat. Weizmann set his sights on founding a scientific research center in what was then still British-mandated Palestine; he did so in the small agricultural community of Rehovot. Located on Israel's Mediterranean coastal plain, the Rehovot of biblical days was the site of an ongoing war between the Hebrews and Philistines. Today it is situated a few miles from Yavne, a town considered by Israelis as a center of the high-technology industry. Weizmann determined that an independent state where refugees from the Nazi regime and other Jews could live and thrive would also require an industrial base. The scientist in him realized that technological advances and scientific achievement must become synonymous with the Zionist effort to create a Jewish homeland.

Weizmann's vision of creating such a dominion was fueled both spiritually and financially by his friends Israel and Rebecca Sieff, who, in 1934, established the Daniel Sieff Research Institute, named in memory of the couple's son. In the years prior to World War II, the Sieff Institute concentrated on research in organic chemistry and biochemistry, with a focus on yielding medical products from synthesized chemicals. When World War II broke out in 1939, the Sieff Institute turned its attentions toward ever-increasing needs created by the war. The small number of Jewish scientists making their home in the Rehovot research center developed a series of pharmaceutical supplies to aid the Allied forces in the Middle East. Subsequently, the scientific corps of the Israeli defense forces (Hemed) adopted Rehovot as its home. Working under the institute's auspices, these young scientists developed a cadre of weapons and other war materials.

While Weizmann endorsed the need for institute scientists to devote much of their attention to the war effort, his long-term focus remained the creation of a Jewish state and its subsequent need to be recognized as a force in the free world. Indeed, the Sieff Institute's motto—"Work for this Country. Work for Science. Work for Mankind"—embodied Weizmann's vision for the research center. Therefore, on the occasion of his 70th birthday in 1944, with the world still embroiled in war, Weizmann's answer was clear when his colleagues desired to pay tribute to their mentor but lacked what they considered to be a suitable gift. "I need nothing for myself, but if you wish, do something for the expansion of the Daniel Sieff Research Institute," said Weizmann. That birthday wish was the impetus for the development of the multidisciplinary research institute that today is world renowned for its sci-

entific conferences and symposia. On June 3, 1946, two years after Dr. Chaim Weizmann announced his hope for the future, the cornerstone for the Weizmann Institute of Science was laid in Rehovot.

Completion of the Weizmann Institute was interrupted by Israel's War of Independence. Despite the outside struggles, research at the Institute continued, and in 1946, when the U.S. Army announced completion of the world's first computer, Rehovot mathematicians turned their attention toward the new technology. Eight years later, the resulting WEIZAC computer, which placed the institute on the computer science map, was recognized by Albert Einstein as a technological achievement.

On November 2, 1949, with the permission of the Sieff family, the Daniel Sieff Research Center was formally rededicated as the Weizmann Institute of Science. Under the dual leadership of Meyer W. Weisgal and Dewey D. Stone, the new institute saw swift development, as it rapidly increased its staff with both Israeli and non-Israeli scientists. The Weizmann Institute of 1949 consisted of 60 laboratories in 9 scientific fields. In its first decade as the Weizmann Institute of Science, the research center established itself both as a scientific and a political entity. The institute's first major scientific conference in 1956 generated so much interest that a campus auditorium was constructed to accommodate participants. The conference, an international symposium on macromolecular chemistry, attracted not only leaders in the scientific and research communities, but political notables such as Golda Meir and David Ben-Gurion, both of whom attended the opening dinner.

Nine years after its founding, the Weizmann Institute established the Feinberg Graduate School, and in so doing rivaled the Hebrew University of Jerusalem and the Technion in Haifa as a graduate training center. The school's master of science and doctor of philosophy degrees in the life sciences, chemistry, mathematics, physics, science teaching, and computer science are accredited by both the State of Israel and the Board of Regents of the State of New York. Its first Ph.D. was conferred in 1964. The current student/teacher ratio at the graduate school is two to one. In addition to taking courses, students enrolled in the graduate program must show active involvement in one of the 800 ongoing research projects at the institute.

In an effort to draw upon industrial sponsorship for processes developed at the institute, the Yeda Research and Development Company was founded in 1959. Yeda, Hebrew for "know-how," holds title to all inventions and scientific advances made at the institute and acts as a liaison between scientists and industrial investors. The company, the first of its kind in Israel, also apprises institute scientists of projects for which industrial sponsorship is available.

When the department of science teaching was established on campus in 1968, the institute began paving the road for educational reform in Israel. A youth activities

division was added to encourage youngsters considering careers in science. The program attracts some 15,000 students annually.

Since the death of Chaim Weizmann in 1952, the institute has more than doubled in size. A faculty and staff numbering more than 2,300 is divided among 19 departments; in addition, 19 interdisciplinary centers have been established on grounds that cover 300 acres. Campus growth is ongoing, and in the late 1900s some nine major buildings and areas were inaugurated, including the Brain Research Building, the Helen and Martin Kimmel Campus Area, the Dolfi and Lola Ebner Auditorium, and the Weizmann Archives. More than 40 buildings and research facilities grace the campus, in addition to residential housing, recreational areas, historic and memorial sites, and numerous gardens.

A campus architectural focal point is the Weizmann Institute's Canadian Institute for the Energies and Applied Research. Touted as one of the foremost advanced solar research facilities in the world, the structure features 64 large motor-driven mirrors, all tracking the sun onto a 2,100-foot-high central receiving tower.

The Weizmann Institute of today owes much of its prominence to the financial support of the American Committee, a group of leaders in the worlds of science and art that originated in 1944 and has contributed more than \$300 million over the past five decades for the institute's projects and operating needs. Financial contributors to the institute include Walter Annenberg, publisher of *TV Guide*; philanthropists Helen and Norman Asher; Edgar M. Bronfman, president of the World Jewish Congress; and Sara Lee Schupf of Sara Lee pastry fame.

Although it has been little more than 60 years since the institute was founded, its prominence in the spheres of technology and academia are documented. Identified by Nobel Prize-winner Christian B. Anfinsen of Johns Hopkins University as "one of the world's preeminent centers of research in the service of mankind," the institute's contributions to the understanding of cancer and immunological diseases, genetics, computer science, and solar energy have had global impact. According to an institute publication, major advancements in the fight for disease control over recent years include the discovery of antibodies to nerve tissue protein, a development that has improved the diagnosis of a childhood malignancy known as neuroblastoma. Medications for the treatment of epilepsy, stroke, and Alzheimer's disease are also among the institute's contributions, and research into finding the gene responsible for causing several types of acute childhood leukemia has been successfully conducted by Professor Eli Canaani. Recent Weizmann Institute contributions to the study of the earth's environment include the development of solar-powered laser systems used to monitor the atmosphere from space and an unprecedented turbine that generates electricity from concentrated sunlight.

Noted for its international scientific conferences and its department of visiting scientists, the institute has welcomed researchers from institutions throughout the world, and in 1993 received 105 visitors from former Soviet bloc countries. The restructuring of Eastern Europe has also made available to the Weizmann Institute many premiere researchers heretofore inaccessible; Eastern Europeans now constitute a large contingent of visiting scientists. Current staff members include Shlomo Alexander, who was awarded the 1993 Israel Prize in Physics; Varda Rotter and Moshe Oren, joint recipients of the 1993 Feher Prize in Medicine; and Professor Mati Fridkin, winner of the Teva Pharmaceutical Industries Prize.

The shifting political environment in the Middle East is identified by institute president Haim Harari as impetus for the institute to confer a master's degree and post-doctoral designation upon students from Egypt. In a 1994 message, Harari maintains that while the Middle East is "on the threshold of change," certain elements of the

research center will remain uncompromised, including its "commitment to recruiting the finest minds and providing them with optimum conditions, and our determination to hold fast to the ideals of our founder, Chaim Weizmann."

Further Reading: Insights into Chaim Weizmann, his career, and the Weizmann Institute will be found in the following: Harold M. Blumberg's *Weizmann: His Life and Times* (New York: St. Martin's Press, 1977); Barnet Litvinoff's *Weizmann: Last of the Patriarchs* (New York: Putnam, 1976); the memoirs of Weizmann and his wife: *Chaim Weizmann, Trial and Error* (New York: Harper, 1949; reprint, 1977); and Vera Weizmann's *Impossible Takes Longer: The Memoir of Vera Weizmann, Wife of Israel's First President, as told to David Tutaen* (New York: Harper and Row, 1967).

—Sharon Nery

WELLESLEY COLLEGE

(Wellesley, Massachusetts, U.S.A.)

Location:	Wellesley, Massachusetts, 12 miles west of Boston.
Description:	A private four-year women's college with 2,300 students from 42 countries and 49 states.
Information:	Board of Admission Wellesley College 106 Central Street Wellesley, MA 02181-8292 U.S.A. (617) 283-2270
Visiting:	Students lead tours of the campus throughout the year. Call the telephone number above for specific details.

Wellesley College is the only major private women's college in the United States that has appointed only female presidents. Each of the 12 presidents has contributed toward moving the college forward, given the issues, priorities, and twists of fate of the time. The continuity of vision and direction is evident. Wellesley remains committed to educating women for leadership roles in the community and society, a goal sought by the founders Henry and Pauline Durant.

The Wellesley College story begins with the marriage of Henry Fowle Durant and Pauline Cazenove on May 23, 1854. They bought a rambling brown farm cottage (now known as Homestead) as a summer retreat 12 miles west of Boston. Their son Harry was born in 1855 and daughter Pauline Cazenove in 1857. When Pauline died at six weeks, their grief turned to total absorption with two-year-old Harry. They purchased 300 acres on Lake Waban, built barns, greenhouses, and gardens, and planned to give it all to Harry as his country estate.

Those dreams were abruptly halted when eight-year-old Harry died of diphtheria on July 3, 1863. The Durants sold the cottage, purchased the nearby Webber residence, and moved to New York City. They saw clearly the need for improved educational opportunities for women and the scarcity of teachers after the Civil War.

In 1867 they made a key decision: they would use their 300-acre estate to educate young women. They began planning every aspect of the college—grounds, buildings, curriculum, faculty. Believing that beauty of surroundings were important in the shaping of character, they began providing for it.

On March 17, 1870, the commonwealth of Massachusetts chartered and authorized the Wellesley Female Seminary to provide a program of education beyond high school. The board of trustees' initial meeting on April 16, 1870, was the beginning of the governing body which expanded to include alumnae representation in 1889 and student non-voting presence in the present day. On March 7, 1873, the name of the institution was changed to Wellesley College.

On August 13, 1871, Pauline Durant laid the first foundation stone for College Hall and gave each worker a copy of the Bible. The architect Hammatt Billings of Boston designed the building in the French Second Empire style, developed in France in the reign of Napoléon III. Henry Durant supervised the day-to-day construction. Following the single building concept for a college, College Hall was to contain classrooms, library, residences, laboratories, assembly hall, and administrative offices. It stretched for over one-eighth mile on the hill overlooking Lake Waban and resembled a cathedral more than a college.

On September 8, 1875, 314 students arrived, primarily via the Boston-Albany Railway, stopping at West Needham. Horse-drawn buses with signs saying WELLESLEY COLLEGE created a caravan for the one mile between the station and campus. President Ada L. Howard greeted the students; school representatives assigned rooms in the nearly completed College Hall and reassured parents. One student, Louise McCoy, recalled, "We were pioneers in the adventure—voyagers in the crusade for the higher education of women, that perilous experiment of the 70's, which all the world was breathlessly watching and which the prophets were declaring to be so inevitably fatal to the American girl."

The Durants stated that Wellesley College was opened for the "purpose of giving to young women a collegiate education, opportunities fully equivalent to those usually provided for young men." This pioneering spirit contrasted with the thoughts of a Boston physician who said that "woman's brain was too delicate and fragile a thing to attempt the mastery of Greek and Latin."

The first president, Ada L. Howard, an 1849 graduate of Mount Holyoke Seminary, was strongly influenced and directed by the Durants' presence during her tenure (1875–81). Woven into the ideals of the college were the Durants' strong Christian beliefs. With his son's death, Henry had taken on an evangelical fervor.

The curriculum grew with Henry Durant's ability to attract strong teachers in varying subject areas. His love of literature, music, and the sciences influenced the initial



Wellesley College

departments: philosophy, history, art, music, German, English literature, mathematics, Greek, Latin, French, and the sciences. The first faculty consisted of 7 professors as heads of departments and 11 teachers of academic subjects. With the exception of Charles H. Morse, professor of music, all were women living in College Hall, and all were members of evangelical churches.

The Durants initiated several lasting traditions. The first Flower Sunday was held in September 1876 to welcome students back and exchange flowers. In 1877 the students planted a tree marking the first Tree Day, a tradition which the first-year students continue to this day. An embedded stone in front of each tree indicates the class year. In 1878 Pauline Durant was instrumental in establishing the Students' Aid Society to assist with expenses and to encourage a diverse community. In 1879 the Durants imported and planned for the planting of 1,000 rhododendrons and azaleas, and over 7,000 crocus and snowdrop bulbs. The parklike grounds included fields of wildflowers for students and faculty to pick.

On February 16, 1877, the commonwealth of Massachusetts authorized Wellesley College to grant degrees; two years later 18 students were graduated in the first commencement. The Alumnae Association began in 1888, a clear indication that graduates wished to retain ties with Wellesley.

Two graduates of the class of 1880 had significant influence on the curriculum of the young college. Charlotte Fitch Roberts earned her Ph.D. in chemistry at Yale University in 1894 and taught chemistry at Wellesley for 37 years (1880–1917). Katherine Lee Bates, poet, author, and teacher, wrote "America the Beautiful" in 1873, in an inspired moment on Pike's Peak, Colorado. She helped build a distinguished department of English literature as a faculty member from 1885 to 1925.

In October 1881 Henry Durant died, drawing to a close his attentive, strong presence. President Howard's physical health had been failing, and she submitted her resignation that same year.

The second president, Alice Freeman Palmer, came to Wellesley in 1879 as professor of history and was appointed president in 1881 at the age of 26. During her six years as president (1881–87), this spirited, visionary woman was credited with transforming Wellesley into a modern collegiate institution. It became clear that many students were not adequately prepared for the academic rigors of college life. As an example of working with "feeder schools," President Freeman arranged with secondary schools to prepare students well for Wellesley. Dana Hall School in Wellesley was the first such school. Freeman is credited with "inspiring the principals of 15 schools with the idea of definite training for entrance into Wellesley." Her work was instrumental in the increased numbers of qualified applicants, which led to higher standards of admission, which evolved into higher standards for academic work. When Freeman arrived, Wellesley

had 375 students; when she left there were 628 students. She continued the Durants' tradition of appointing women scholars to teach and conduct research.

The desire for a tightly knit community brought other developments: Simpson Cottage offered a quieter environment than College Hall; two dormitories opened; and Eliot House became the first cooperative house where students could assume more housekeeping responsibilities in exchange for lower fees.

The third president, Helen A. Shafer, came to Wellesley in 1887 as professor of mathematics and head of the department of mathematics. Her intense interest in scholarship was coupled with organizational ability and patience. She began her presidency (1887–94) with curriculum revision that significantly expanded the number of electives. Student involvement was evidenced with the publication of the first student newspaper, *The Courant* (1888), and the first yearbook, *Legenda* (1889). In 1889 the first foreign student arrived, Kin Kato, from Japan.

In 1891, Mary Whiton Calkins established the first psychological laboratory in a college for women. Her experimental studies included work with memory, association, and a method of investigation. She was a faculty member from 1887 to 1929 and head of the psychology and philosophy department from 1898 to 1929. She was elected president of the American Psychological Association in 1905 and of the American Philosophical Association in 1918.

Annie Jump Cannon, class of 1884 was an acclaimed alumna and considered the foremost woman astronomer in the country. She was a member of the staff of Harvard Observatory. She was the first woman awarded the Henry Draper gold medal from the National Academy of Sciences. In 1933 she developed the classification system still used to identify the spectre of more than 300,000 stars.

Upon President Shafer's death in 1894, Julia Josephine Irvine became the fourth president (1894–99). She was an inspiring professor of Greek at Wellesley. As a commitment to the expansive, undulating grounds, a committee on buildings and grounds was established. Irvine is best known for her extensive revision of the curriculum, from one that largely prescribed courses to one with many electives.

Responding to the need for more informal fellowship among students and faculty, the development of Society Houses resumed. Since 1877 Shakespeare House had been a gathering place for faculty and students interested in Shakespearean drama. In 1889 the Art Society (which became Tau Zeta Epsilon in 1894) was granted a charter to provide opportunities for additional study of art, to encourage scholarly work, and to promote fellowship among undergraduates. The limited membership in the societies has been controversial. Two additional societies are currently on campus: Zeta Alpha House (literature) and Phi Sigma Lecture Forum (cultural and public affairs).

In honor of their father and the college's spiritual needs, the children of former trustee William Houghton gave a

gift for the construction of the Houghton Memorial Chapel. Controversy arose about its placement and relationship to the landscape and to the college's other architectural styles. Decades later, Dr. Owen H. Jander, professor emeritus of music, spearheaded the project to build a seventeenth-century mean-tone organ in the chapel. Jander taught at the college from 1960 to 1993 and was a lecturer and scholar of seventeenth-century Italian music and the instrumental music of Ludwig van Beethoven.

Caroline Hazard, the fifth president (1899–1910), was a highly cultivated woman from Rhode Island with experience in business, philanthropic affairs, and long-range planning. Hazard personally financed the building of Oakwoods, the president's house at that time. Campus expansion included five dormitories, the Whittin Observatory, Billings Hall, and Mary Hemenway Hall (a gymnasium). The Wellesley College Library opened in 1910, the result of a challenge gift by Andrew Carnegie.

In 1901 following an initiative by students and faculty, the Student Government Association was formally established. Currently all students belong to the college government, and the senate is composed of elected representatives from each residence hall as well as from off-campus students. College government officers are elected each spring, campus-wide. A student-run judicial system handles violations of the honor code.

Another initiative by faculty and alumnae recommended the adoption of a plan for the college grounds. Frederick Law Olmsted Jr. prepared recommendations for the board of trustees in 1902, including the desirability of buildings which honor the landscape and the benefits of comprehensive planning.

After Hazard's resignation in 1910, the sixth president, Ellen Fitz Pendleton (class of 1896), who was dean of the college, was appointed president. The first alumna to become president, she served for 25 years (1911–36), the longest tenure of any president of Wellesley. Early in her tenure Wellesley College experienced four hours that irrevocably changed its face and direction. The night was March 17, 1914. At 4:30 A.M. fire broke out on the fourth floor of College Hall; by morning, the entire building was destroyed. No injuries occurred, due to early warnings and diligent fire drill training. Faulty equipment in the zoology laboratory was suspected.

Overnight, Pendleton's primary focus became the rebuilding of the campus. A makeshift wooden structure between the library and the chapel provided classroom and office space. Tower Court, the first dormitory on College Hall Hill, was built within a year; two others followed within a decade. Five dormitories became cooperative houses.

The board of trustees accepted the plan to design a block of buildings and construct sections when funds were available. Wellesley's use of the Collegiate Gothic style began with Founders Hall in 1919 and continued with Alumnae Hall, a library addition, Green Hall, and

Pendleton Hall. Science facilities were also improved and a greenhouse was built. Pauline Durant lived in what is now the president's house and remained actively involved with the college until her death in 1917.

Following the retirement and death of Pendleton in 1936, Mildred McAfee, formerly dean of the college of women at Oberlin, became the seventh president of Wellesley College and served from 1936 to 1949. Physical development slowed with World War II: the recreation building was the last major construction after the fire. The college granted McAfee a leave of absence to be the first director of the WAVES in Washington, D.C.; for her work she received the Distinguished Service Medal.

In 1940 Harriet B. Creighton (class of 1929) joined the faculty as associate professor of botany and retired as professor emerita. During her tenure of over 30 years, she was a meticulous curator of the botanical garden and internationally known for her horticultural concerns and her scholarship.

Lucretia Mowry came to the college faculty as professor of religion and biblical studies in 1942, specializing in New Testament literature. She was the first woman on the committee to revise the Revised Standard Version of the Bible.

Following McAfee's resignation in 1949, Margaret Clapp, class of 1930 and Pulitzer Prize-winning biographer, became the eighth president (1949–66) and the second alumna to be elected president. Expansion began again with three dormitories, another library expansion, and the Jewett Arts Center, the latter providing facilities for students for art, music, and theater. During President Clapp's tenure, several well-known faculty came to Wellesley: Carolyn Shaw Bell held the Catherine Coman Chair in Economics and taught at Wellesley from 1950 to 1989. Her research interests were human capital, income details, and quality of economic data.

Eleanor Rudd Webster (class of 1942) taught at Wellesley for 33 years with specialization in the history of science and physical organic chemistry. She helped in the design and direction of the National Science Foundation-supported Wellesley College Institute in Chemistry. This program enabled women whose undergraduate training had been completed 5 to 25 years earlier to return to school to pursue an M.A. in chemistry. She also served as the first director of Wellesley Continuing Education, a program for women of nontraditional college age.

Clapp expanded curriculum offerings in innovative directions. In 1949 the college first offered interdepartmental majors, including natural resources and conservation, Latin American studies, and medieval studies. The new biological department combined all life science courses.

During Clapp's tenure, many students who worked in very visible fields were graduated. In the class of 1959 were Madeline Albright, foreign policy analyst and U.S. ambassador to the United Nations, and Amalaya L. Kearse, judge in the U.S. Court of Appeals. Four gradu-

ates have excelled in broadcast journalism: Lynn Sherr (1963), Cokie Roberts (1964), Linda Wertheimer (1965), and Diane Sawyer (1967). Authors include Nora Ephron (1962), Nancy Friday (1955), and Susan Sheehan (1958), winner of the Pulitzer Prize. Actresses include Ali McGraw (1960) and Barbara Babcock (1960). President Clapp resigned, effective June 1966.

Ruth M. Adams, a specialist in Victorian literature, served from 1966 to 1972 as Wellesley's ninth president. Wellesley College experienced significant expansion of educational experiences for students. New curriculum included Afro-American studies, Asian studies, classical civilization, molecular biology, American studies, and urban studies. Cross registration with the Massachusetts Institute of Technology (MIT) began in 1968. Students may study at both institutions and be eligible for a double degree program with MIT.

Hillary Rodham Clinton (1969), First Lady of the United States in the administration of her husband, Bill Clinton, majored in political science and was graduated with high honors. She served as president of the college government in her senior year and received her law degree in 1973 from Yale Law School. Her professional work has included work as an advocate for children's health, for quality education, and for the changing roles of women in American society.

In 1971, the board of trustees decided that Wellesley should remain a women's college, reaffirming its mission to educate women for roles of leadership. This response followed a report from the elected Commission on the Future of the College, made up of students, faculty, alumnae, trustees, and administrators. The majority of the commission had recommended that Wellesley begin offering a limited coeducational program in 1972–73. The commission's reasons were the expressed preference of high school seniors for coeducational colleges and universities, student questionnaires, and the sense that male student would improve the cultural, educational, and social life at Wellesley.

The trustees' primary reason for not accepting the commission's recommendation was the lack of hard data or research to support or oppose the change. The proposed cost was questioned, as were the consequences of losing the identity of the all-women's college. Reaction to this decision varied; most faculty members strongly urged that women's programs be emphasized. When the question arose regarding the search for the next president, the majority of the college community believed it should be a woman.

This strong restatement of purpose was crucial to the charge given Barbara Warne Newell as the tenth president (1972–80). She was a well-known advocate of women's rights in the academic world. The college experienced renewed conviction around the single-sex decision with Newell as an articulate, visible spokesperson. During Newell's term, significant expansion of existing

facilities took place, including the 1974 opening of the Center for Research on Women. Currently more than 100 men and women work there on public policy and family issues. In 1975, the expansions were completed of the Margaret Clapp Library and Sage Hall (renamed the Science Center).

In Wellesley's centennial year of 1975, Newell wrote, "Wellesley College entered its second century at a critical juncture in American higher education and American Society. We have opportunities to pioneer new directions in the education of women." Wellesley later granted Newell a leave of absence, during which she was ambassador to UNESCO in Paris.

In 1981, Nannerl Overholser Keohane (class of 1961), became the 11th president and 3rd alumna to lead the college. With her 12 years of leadership (1981–93), Wellesley's reputation was enhanced through expansion of research and special programs. In 1981 the Stone Center for Developmental Services and Studies opened in the former Simpson Cottage. The center focuses on women's psychological development and the prevention of psychological problems. The college reinstated the required writing program and began an interdisciplinary cluster program for first-year students. The latter was replaced in 1995–96 by INCIPIT: Introduction to Collaboration: Interdisciplinary Problems and Intellectual Tools.

In 1982 Anna and Samuel Pinanski established the Pinanski Prize for Excellence in Teaching, an annual award given to up to three members of the Wellesley faculty. Nominations come from within the college community, and the selections are made by the president in consultation with the Pinanski Prize Committee. In the first year's awards, the Pinanski Prize was given to David R. Ferry, Sophie Chantal Hart Professor of English Emeritus, for his notable poetic achievement. His areas of concentration have been Shakespeare, romantic, and modern poetry. In 1994 he was awarded the Academy of American Poets Fellowship.

Keohane's fundraising efforts resulted in a record-breaking capital campaign which raised \$168 million and strengthened the financial status of the college. The campaign brought alumnae groups throughout the country together in support of the college's needs for increased financial aid, endowment, faculty resources, and building projects. Keohane left Wellesley College in 1993 to become the first woman president of Duke University.

The Davis Museum and Cultural Center, designed by Rafael Moneo of Madrid, was dedicated in October 1993. It houses ten galleries for exhibition of the permanent collection of 5,000 pieces, a gallery for special exhibitions, a cinema, and a cafe.

Diana Chapman Walsh, class of 1966, became the 12th president in August 1993. As the fourth alumna president, she brought extensive experience in public health policy and works as an advocate for medical research and preventative health issues.

In 1993, Marjory Stoneman Douglas (class of 1912) received the Freedom Medal, America's highest civilian award, from President Bill Clinton. Her life had been dedicated to preserving the Everglades. Her book *The Everglades: River of Grass*, published in 1947 and her founding of the Friends of the Everglades in 1970 are expressions of her intense environmental concern and activism. In March 1995, she gave the Freedom Medal to President Walsh, saying "I have no living relatives so Wellesley is like my family. It will be there long after I am gone."

Thus, the pioneering vision of the Durants has passed through the hands and talents of 12 female leaders. Wellesley College's 120-year history continues with 2,300 students knowing that they are there, in the words of the college motto, "not to be ministered unto but to minister."

Further Reading: At the time of Wellesley College's centennial, Jean Glasscock, general editor, compiled writings about many aspects of the college's history in *Wellesley College, 1875–1975: A Century of Women* (Wellesley, Massachusetts: Wellesley College, 1975). In *Adamless Eden, The Community of Women Faculty at Wellesley* (New Haven, Connecticut: Yale University Press, 1995), Patricia Ann Palmieri provides a narrative history of the founding and first generation of Wellesley faculty. *The Survey of Buildings and Grounds* includes a section "Development of the Wellesley College Campus," which documents the history and development of the campus (Wellesley, Massachusetts: Wellesley College, 1989).

—Chris Farrow

WILLAMETTE UNIVERSITY

(Salem, Oregon, U.S.A.)

- Location:** Adjacent to the state capitol building in Salem, Oregon.
- Description:** The first institution of higher learning in the Pacific Northwest, Willamette is now a private liberal arts university enrolling over 2,200 students in undergraduate, graduate, and professional schools.
- Information:** Office of Admission
Willamette University
900 State Street
Salem, OR 97301
U.S.A.
(503) 370-6303

The origins of Willamette University are intertwined with the missionary activities of the Methodist Episcopal Church (now the United Methodist Church) in the 1830s. One of the institution's eventual founders, Reverend Jason Lee, was chosen by the Missionary Society of the Methodist Episcopal Church in New York to establish a mission among the American Indian population of the Oregon territory. Lee and a small group of missionaries traveled across the country with members of a trading expedition and arrived at the Willamette River in northern Oregon in September 1834. Soon afterward, a mission school for Indian children was opened. In 1838 Lee made the return trip east to report to the mission board. His accounts of the mission stirred support, and the board agreed to provide nearly \$40,000 in supplies and personnel for the purpose of further establishing the mission. Those chosen to assist Lee at the mission, referred to in the annals of Willamette history as the "Great Reinforcement," traveled by boat to the Oregon coast, sailing around the southern tip of the South American continent in 1839.

In the year that followed, a small community began to form in Chemeketa (present-day Salem), and a debate arose among community members as to whether a separate school for the children of missionary settlers was necessary. A meeting to discuss the issue was held in the home of Jason Lee in January 1842, where members decided that immediate action should be taken to establish the school. Two weeks later a board of trustees was appointed, the constitution and bylaws were adopted, and the school was given the name Oregon Institute. These acts constitute the founding of Willamette University.

Lee traveled east again in 1843 and 1844 to solicit more funds from the mission board but was told upon arrival that he had been replaced. When he arrived at Chemeketa in the spring of 1844, George Gary, Lee's replacement, found enrollment at the Indian Mission School (now called the Indian Manual Labor School) to be virtually nonexistent, due to an epidemic of scrofula. Gary closed the India Mission School and sold its principal building (a newly constructed three-story building that was considered to be the largest on the Oregon coast and valued at \$10,000) to the trustees of the Oregon Institute for \$4,000.

Having acquired at minimal cost a building constructed expressly for academic purposes, the board of trustees formally opened the Oregon Institute in the fall of 1844. The faculty consisted of one teacher; enrollment for the first term was five students. Enrollment grew steadily until community leaders decided that the growing population at Salem and the resources available to the school warranted the establishment of a postsecondary institution at the Oregon Institute. Specifically, plans called for the institute to remain a preparatory school; however, the institute would now comprise a department within the larger institution. The board of trustees petitioned for and received a charter from the Oregon Territorial Legislature on January 2, 1853. The first degree was awarded to Emily York in 1859.

In its early years, the school maintained a strong affiliation with the Methodist Episcopal Church, as the church continued to give financial support to the fledgling institution. Moreover, nearly all faculty and administrative staff were members of the Methodist Episcopal Church and presumably were committed to the church's missionary efforts. Thus, the school's activities were connected in a religious atmosphere and governed by a strict moral code that applied to all individuals associated with Willamette: the university's third president, Joseph Henry Wythe, although acknowledged as a brilliant scholar, was dismissed from his duties as president on grounds that he refused to curtail his use of tobacco products in public.

Construction began on University Hall, the first permanent building on the Willamette campus, in 1864. To construct the building, 500,000 bricks were made out of clay taken from a nearby location. The building, which took three years to complete, was later named Waller Hall in honor of the trustee who had raised the monies to build it. The decision on the part of the university trustees to commence by raising a large, permanent structure would prove fortuitous, for in 1872 a fire



Willamette University

destroyed the Oregon Institute building, formerly the Indian Mission School. (This was the first of many fires that would seriously damage the university.) Fortunately, however, alternative classroom space was available; otherwise the preparatory school's very existence would have been jeopardized.

The university witnessed considerable growth over the next two decades. By the early 1870s it had a commercial department, a medical department, and a music department, the latter awarding its own degrees by 1872. Average annual enrollment through the 1870s was 280 students, although only 30 percent of these students studies at the postsecondary level. After much fervent debate,

a women's college was established at Willamette in 1880. Fittingly, then-president Thomas Van Scoy purchased the home of Chloe Clarke Willson, first instructor at the Oregon Institute, intending to convert the home into an academic building for the Women's College. Additions to Willson's house were made and the building was then named Lausanne Hall, after the boat that carried the "Great Reinforcement." Also established was the College of Law in 1883, which is still in operation today.

The 1890s, however, was a troublesome decade for the Willamette community. In 1890, Van Scoy appointed Charles Carroll Stratton to the office of chancellor. Stratton, realizing the institution was heavily in debt and that

it was, to some extent, still mobile (having only one permanent building), campaigned to transplant the school from Salem to Portland, a more urban location. There ensued a competition between the two communities, both of which offered substantial gifts of property to the school. The board of trustees eventually voted to remain in Salem. Stratton, leaving behind his responsibilities at Willamette, helped establish the University of Portland in 1891. Much to the dismay of the Willamette community, Van Scoy followed Stratton to Portland to become dean of the newly established school.

The Methodist Conference apparently agreed with Stratton and Van Scoy that Portland would make a better base for a university than Salem, for they withdrew significant financial support from Willamette and gave it to the University of Portland. A bitter competition for students followed, and rumors circulated in Salem that Van Scoy and his cohorts were infiltrating the Willamette campus to lure students to Portland. This state of affairs continued until 1899, by which time the University of Portland folded and subsequently was "reunited" with Willamette University in Salem by the Methodist Conference.

In the fall of 1891 fire again struck the campus; the roof and tower of University Hall was consumed by flames. Adding to the growing list of difficulties was an increasing debt. In the years 1892 and 1893, trustees secured loans totaling \$24,000 to cover expenses and previous debts, but many trustees feared the institution could not be saved.

It was not until the turn of the century that the school's fortunes rose. Under the direction of John Coleman, university president from 1902 to 1907, construction began on four new academic buildings. One of the new structures was built to house the medical school, a department that had been in a state of transition since its inception in 1867. In 1880 the department had moved to Portland to take advantage of better medical facilities, but in 1895 doctors in the department lost their privileges at a Portland hospital to their counterparts at the University of Oregon. Classes were held in Waller Hall and in vacant rooms around Salem until the new building was completed in 1906. Ironically, Willamette's medical school would close seven years later, merging with the University of Oregon College of Medicine.

Willamette's fortunes improved markedly during the administration of Carl Gregg Doney, which lasted from 1915 to 1934. Overall enrollment nearly doubled during Doney's tenure as president, and total endowment and number of faculty members tripled. Willamette not only survived the era of World War I and the Great Depression, but it began to flourish. The school also withstood two more major fires on campus.

At the same time that Willamette began to establish itself more firmly, certain aspects of its character began to fade. Notably, the Kimball School of Theology—a school

for which trustees had not charged tuition, revealing the high priority they placed on training ministerial candidates—closed its door in 1930. Its closing seems to have coincided with Willamette's general shift in focus, wherein strict adherence to the teachings of the Methodist Episcopal Church was no longer expected of students and faculty. Corresponding to this change was the gradual adoption and promotion of a liberal arts curriculum. In fact, the Methodist Church no longer substantially supports Willamette University: by 1987 the church accounted for only three-tenths of one percent of the school's annual donations.

On December 7, 1941, a group of Willamette athletes witnessed firsthand the immediate aftermath of the bombing of Pearl Harbor and, effectively, the beginning of the United States' involvement in World War II. The Willamette football team had traveled to the Hawaii Islands to play the University of Hawaii the day before and were still there when the bombing took place. They returned home on a ship that carried wounded back to the mainland for further medical attention. Willamette again became involved in the events of World War II, if only peripherally, when the new Lausanne Hall was made a base for a College Navy Training Program from July 1943 to November 1945. The program trained individuals as medical personnel and deck officers.

In 1965 Willamette University established what is termed a "sister-college relationship" with the International College of Commerce and Economics, now known as Tokyo International University. This arrangement allowed students from both schools to travel overseas as part of their curriculum, and to attend classes specifically designed for visiting students. In 1989 Tokyo International took this relationship a step further by establishing a satellite school (Named Tokyo International University of America) in close proximity to Willamette University, with the intention of establishing similar satellite campuses around the world. Students from the parent institution in Tokyo initially are required to take accelerated English-language courses, after which they may enroll in courses designed by Willamette professors that explore elements of U.S. history, culture, and society, as well as U.S. commerce and trade. For Willamette students the curriculum is much the same. In recent years Willamette also has established sister-college relationships with Xiamen University of the People's Republic of China, Kookmin University in Seoul, South Korea, and Simferopol State University in the Ukraine.

Today, Willamette University enjoys a position of geographic prominence—adjacent to the grounds of the state capitol of Salem—far removed from its humble beginnings in the frontier wilderness of the Oregon Territory.

Further Reading: Accounts of Willamette's founding may be gleaned from various volumes dealing with the history of

Oregon and the Oregon Territory. A more detailed discussion of Willamette's history is included in *Chronicles of Willamette*, by Robert M. Gatke (Portland, Oregon: Binsford and Mort, 1943), and *Chronicles of Willamette Volume Two*, by Robert D. Gregg (Portland, Oregon: Durham and Downey, 1970). A briefer history published by the university

is *The First Hundred Years: 1834–1934*, by Wright Cowger (Salem, Oregon: Willamette University, 1981).

—Christopher Hudson

WILLIAMS COLLEGE

(Williamstown, Massachusetts, U.S.A.)

Location:	Williamstown, Massachusetts, 135 miles northwest of Boston.
Description:	A private college enrolling approximately 2,000 students in undergraduate and graduate programs.
Information:	Office of Admissions Williams College P.O. Box 487 Williamstown, MA 01267 U.S.A. (413) 507-2211
Visiting:	Tours are conducted daily for prospective students and their families. Phone the number above for the schedule.

The contents of Colonel Ephraim Williams's army chest testified to his regard for religion, education, and the western frontier of Massachusetts. Killed in September 1755, on a reconnaissance mission during the French and Indian War (sometimes known as the Seven Years' War), he left in his army chest 11 books, including a *New Testament* and a series of essays on social, political, theological, and academic issues. Also in the chest was his will, which left his "residuary estate" for the "support and maintenance of a free school (in a township commonly called the west township) for ever." Williams's will stipulated that the township in which the school was to be located be named Williamstown and that it must be "within the jurisdiction of Massachusetts Bay."

Though the colony of Massachusetts very early demonstrated a commitment to education by decreeing in 1647 that every township of 100 families should have a public grammar school to prepare youths for university study, the initial reaction of the people of West Township to Williams's bequest was cool to indifferent. Not until 1765 did a meeting of the citizenry choose a committee to obtain a copy of the colonel's will. Several times the proprietors (governing persons) of the town dismissed an article calling for a committee to pursue the idea of a free school. However, by 1770, minds had changed, and the idea of a free school had become so appealing that the town brought the executors before the state legislature, accusing them of neglecting their duties, which neglect meant that the town could not "reap the intended of so noble and worthy donation."

Executors blamed the delay on a border dispute between Massachusetts and New York for the area in which Williamstown was located. At the time Williams wrote his will, they replied, New York claimed jurisdiction of the territory. Not until 1784 did the executors raise the issue again with the legislature. They asked that the legislature pass an act creating a corporation of "Meet Persons" to carry out "the pious and Charitable Intention of the Testator." In March 1785, the legislature incorporated "The Trustees of the donation of Ephraim Williams, Esq., for maintaining a Free School in Williamstown."

Williams's bequest of \$9,297 was not sufficient to establish a free school. Local subscriptions brought in another \$1,000, and a lottery—a common practice at that time—brought in another \$3,500. Construction was begun in 1790 on the school's first building, which later became known as West College. The Free School opened in 1791 with two departments—a grammar school (or academy), which charged a tuition of 35 shillings yearly, and an English free school. When the Free School, transformed into Williams College, opened its doors on October 9, 1793, it had an enrollment of 18 undergraduates: 11 freshmen, 3 sophomores, and 4 juniors.

The school was open scarcely a year when the ambitious trustees focused on creating a college for "young men from every part of the Union," a goal that violated the intentions of Williams's will. What the colonel had wanted was a free school for the children of military families in the township west of Fort Massachusetts. His legacy instead is the second oldest college in Massachusetts.

One constant in the history of Williams College had been the issue of its location in the topmost northwest corner of Massachusetts. Before the founding of the college, Colonel Williams's father, Ephraim Williams, Senior, who had been involved in surveying the land in 1739, found it suitable for settlement. Others, however, found it remote and were distressed at the frequently harsh winters. There was no post office until 1797. Though attempts were made to establish regular tri-weekly stage runs, not until 1826 did regular stage runs begin between Bennington, Vermont, and Pittsfield, Massachusetts. The route included Williamstown.

The issue of moving the college was raised early in its existence. In 1815 an article in the *Hampshire Gazette* asked, "What does Williamstown have that can . . . render a term of four years' residence agreeable or pleasant? . . . Many scholars . . . having entered the institution . . . soon became sick of the place and obtained dismissions." In November 1818, the trustees reversed a previous vote in August; they would favor a move to Amherst if the legis-



Williams College

lature would fund it. In explaining their support of the move, the trustees cited the inaccessibility of the town, the declining enrollment, the dwindling income, and the competing academic institutions that had sprung up in Vermont and New York.

The day after Williams's commencement in 1821, the college's second president, Zephaniah Moore and 15 stu-

dents left Williams for Amherst Collegiate Institute (now Amherst College), where Moore assumed the presidency; the students also remained at Amherst. Moore, who had favored moving the college, left because he lacked confidence in the college's future. Though Williams began to prosper in its location, when enrollment increased from 84 in 1822 to 118 in 1823, the following year the

Amherst Collegiate Institute, about 50 miles east of Williams College, petitioned the state legislature for a college charter. Williams's trustees protested that a second college in western Massachusetts would destroy the first. (Western Massachusetts currently holds over half a dozen institutions of higher education.) Despite its protests, the charter was granted, and Williams's enrollment did indeed drop, from 120 to 80. The college's president (Edward Door Griffin, Moore's successor) said, "The heavens were covered with blackness; . . . we often looked up and inquired, 'Is this death?'" After Moore's departure, Griffin assumed the presidency of the college. He attempted to squelch discussion of a move by raising \$25,000, of which the trustees earmarked \$15,000 to endow a professorship of rhetoric and moral philosophy. He also secured the building of a chapel. Griffin credited a religious revival, during which 70 of the 80 enrolled students were converted, with providing the motivation for raising the \$25,000.

A major watershed in Williams's history occurred with the accession of Mark Hopkins to the presidency. His influence was attested to when, in 1940, the U.S. government issued a series of stamps to honor American education, and Hopkins was chosen to represent the small liberal arts college. Probably the most famous encomium to Hopkins came from a Williams alumnus, President James A. Garfield, who said in 1871, "The ideal college is Mark Hopkins on one end of the log and a student on the other." Hopkins spent 58 years at Williams—as student, tutor, professor, president, and again professor. He was a country boy who had trained as a physician before he returned to his alma mater to teach moral and intellectual philosophy.

In his biography of Hopkins, Frederick Rudolph summarized the trustees' arduous search for a successor to Griffin:

In 1836 Williams College was looking for a president again. The little college in the northwestern corner of Massachusetts was in a characteristic fix: for the third time since the election of the first president in 1793 the board of trustees was being called upon to make the management of a wilderness institution sound attractive, and once more it was failing.

When their first choice turned down the position, the trustees responded to the senior class's advocacy of Hopkins as a suitable candidate by electing him to the post on August 17, 1836. In his inaugural address, Hopkins revealed his priorities in how the students would be influenced:

opportunities and inducements for physical exercise, a healthy situation, fine scenery, proper books, a suitable example on the part of instructors, companions of correct and studious habits, and above all,

a good religious influence. . . . The true and permanent interests of man can be promoted only in connection with religion.

Solidly puritan in character, Hopkins operated on the principle that, according to Rudolph, "he had already found all the truth that was necessary, both for himself and for the Williams student."

Commenting on Williams students after attending commencement exercises in 1838, Nathaniel Hawthorne wrote that the students were "country graduates—rough, brown-features, schoolmaster-looking . . . A rough hewn, heavy set of fellows from the hills and woods in this neighborhood; great unpolished bumpkins, who had grown up as farmer-boys." However, some 14 years later, Williams students apparently aspired to be gentlemen. Hopkins's future son-in-law, John H. Denison, described the Williams student as considerably different from Hawthorne's vision, at a class day exercise in 1862:

He is neither a sneak, nor a hermit, not a bigot . . . nor ■ bootlick to the Faculty, nor a seeker after the valedictory. He is genial, generous, humane, social. He knows how to behave in company, to get out of a bad space and into a good one; can adapt himself to the world, to circumstances, and the ladies. He does not care so much for college rank as for general information.

By most accounts, academic standards were not rigorous during the Hopkins years. During his student years at Williams, Hopkins himself wrote in a letter, "I find myself able to get my lessons without difficulty in study hours so I go to bed when I please." The letter of another student read, "I never study more than an hour and a half a day, and plenty of time is left for reading, writing, hunting, and skinning and stuffing." Apparently it was not until the 1860s that a Williams professor took roll in class and paid strict attention to class attendance. While Hopkins was out of town in 1868, the faculty instituted a rule that student absences be counted as failing grades. Students voted to secede from the college. When Hopkins returned, he mediated the dispute, and the rule was amended to allow students to make up unavoidable or excused absences. An area in which Hopkins didn't succeed was in his attempt to abolish fraternities. He regarded "the general spirit of secret societies as opposed to that of our Republican institutions and Christianity." Sometime before 1845 the board of trustees overruled Hopkins; after that year he felt the fraternities were too deeply rooted to be removed. Over 100 years later, in the 1960s, Williams College banned fraternities.

When Hopkins resigned in 1872, the college was concerned about its future in the face of low enrollment and inflation. Enrollment was down from 233 to 169 in 1862, a decline not entirely attributable to the Civil War. Only

29 students had withdrawn to go into military service, while enrollment had been declining since 1853. This decline posed a serious problem for a school whose finances depended primarily on student fees. From 1793 through 1870 the commonwealth of Massachusetts appropriated for Williams College over \$150,000. The state then ended its financial support, although in 1888 the state declared the college's cows tax exempt. Fortunately, private benefactors stepped in to alleviate some of the financial difficulties. First of these benefactors was merchant Amos Lawrence, whose 1844 donation of \$5,000 was the first installment of the \$40,000 he donated to the college, making him the largest private donor to the school until 1875.

Unlike most colleges founded in the American colonies, Williams did not have roots in religion. Ephraim Williams had a purely secular purpose when he left his money for the education of sons of the military. In addition, the period when the college was chartered was one of indifference to religion. Thus the college was not required to include clergy on its board of trustees. Only 4 of the original 12 trustees were ministers. During the early days of its existence, when the issue of moving the college arose, the members of the board of trustees who pressed for moving to the Connecticut Valley were clergymen, since they believed that it would be a better location from which to battle the Unitarian influences emanating from Harvard. Mark Hopkins was a strong advocate of religion as an important component of the college's influence on young men. During a religious revival at the college in 1847, he wrote "How much better to be a ploughboy & a Christian, than to be a vicious, sensual, conceited collegian!" Even before Hopkins brought his religious fervor to the presidency, students were concerned with combating "pagan" influences in foreign lands. Five students met in the summer of 1806 for an outdoor prayer meeting; when an electrical storm threatened, the students moved to the cover of a haystack, and there they proposed to send the Gospel to the "pagans" of Asia. The Haystack Prayer Meeting led to the formation of the American Board of Commissioners for Foreign Missionaries.

As early as 1854, the issue of the absence of women from the college was raised in a letter by (later president) James A. Garfield: "the absence of females from table and society takes away a very wholesome restraint and leaves roughness in its stead." In 1871, though no women had applied for admission, an alumni-trustee committee investigated admitting women on equal terms with men. In 1872 and 1873, the Society of Alumni overwhelmingly accepted the majority report of the committee, recommending that the college not adopt coeducation. Not until 1970 were women accepted on equal terms with men. Today, approximately half of Williams students are women.

For a small college, Williams boasts a number of pioneering efforts in education. In 1821 a group of alumni organized the Society of Alumni, the first college alumni society in history. The oldest astronomical observatory in the United States was erected in 1838 by Professor Albert Hopkins (brother of Mark Hopkins) with funds raised by the Society of Alumni. In 1925 Williams was the only major American college without any absolutely required courses and without any wide-option electives. In the fall semester of 1988 Williams introduced in each department at least one course taught as a tutorial, in which, typically, pairs of students meet weekly with the professor to discuss a paper, problem set, or work of art produced by one of the students.

Despite its remote location and its problems with funding, Williams College has, from the first, produced an impressive roster of graduates. Of the 455 students who received degrees during the administration of the college's first president, Ebenezer Fitch (1793–1815), 2 became U.S. senators, 13 became U.S. congressmen, 6 served as justices of the supreme court in their respective states, and 10 went on to teach in a college or a seminary. The twentieth century has included such renowned figures a lawyer Telford Taylor (chief U.S. prosecutor at the Nuremberg war crimes trials after World War II), Fred Wiseman (documentary filmmaker), William Bennett, former U.S. "drug czar" and editor of the best-selling *The Book of Virtues*, George Steinbrenner (owner of the New York Yankees), Fay Vincent (former baseball commissioner), Stephen Sondheim (lyricist for *West Side Story*, composer-lyricist for winning musicals, and 1984 Pulitzer Prize-winner for *Sunday in the Park with George*), and Elia Kazan (director of such Broadway classics as *A Streetcar Named Desire*, *Death of a Salesman*, and *Cat on a Hot Tin Roof*, and Academy Award-winning films *Gentleman's Agreement* and *On the Waterfront*).

Further Reading: Leverett Wilson Spring's *The History of Williams College* (Cambridge, Massachusetts: Houghton Mifflin, 1917) is a comprehensive treatment of the college's early history by an emeritus professor of English from Williams. Frederick Rudolph's *Perspectives: A Williams Anthology* (Williamstown, Massachusetts: Williams College, 1983) is a compilation of original documents relating to the history, growth, and character of the college by a 1942 graduate, who introduces each document and follows it with an editorial commentary. Frederick Rudolph's *Mark Hopkins and the Log* (New Haven, Connecticut: Yale University Press, 1956) is a biography of the college's third president, who held that position for 36 years.

—Diana d'India and Mary Elizabeth Devine

YALE UNIVERSITY

(New Haven, Connecticut, U.S.A.)

Location:	New Haven, Connecticut, 80 miles northeast of New York City, 155 miles southwest of Boston.
Description:	A private university enrolling approximately 10,760 students in undergraduate, graduate, and professional schools.
Information:	Yale University Office of Undergraduate Admissions P.O. Box 1502A Yale Station New Haven, CT 06520 U.S.A. (203) 432-1900
Visiting:	The university maintains a guide service for visitors to the campus. Tours are one hour and begin at Phelps Gate on College Street, between Chapel and Elm Streets. Call the Information Office at Phelps Gate at (203) 432-2300.

In March 1638, David Yale, the father of Elihu Yale for whom Yale University was named, was 23 years old and unmarried when he landed on the bank of the Quinnipiac River on Long Island Sound. Yale was in the company of people seeking a "new haven," the Founders of the New Haven Colony and trading post in New England. Among others, he was accompanied by his stepfather, Theophilus Eaton; his mother, Anne Lloyd Yale Eaton (daughter of Bishop Lloyd of Chester, England); his brother Thomas; and his sister Anne.

Theophilus Eaton, a staunch Puritan, had been a prosperous merchant in London, England, and was chosen the first governor of the New Haven Colony. Accompanying Eaton to New England was another eminent London merchant, Edward Hopkins (who married Anne Yale, Elihu Yale's aunt). Hopkins chose not to settle in New Haven, but rather in Hartford where he was repeatedly elected governor of the Connecticut Colony.

The leading spirit of the New Haven Colony was a graduate of Oxford, the celebrated Puritan and nonconformist, the Reverend John Davenport, vicar of St. Stephen's Church in London. As a nonconformist, Davenport challenged the rites and practices of the established Church of England (and the Crown) and was forced to seek safety in Holland, where he remained for three years. It was there that he worked out his theory for an independent Christian state, a plan which he shared with his devoted friend, Theophilus Eaton.

Davenport's plan for a Christian state led to the founding of New Haven with a group of followers, his former parishioners of St. Stephen's. His plan included a comprehensive system of education, to establish "schools for all, where the rudiments of knowledge might be gained; schools where the learned languages could be taught; a public library; *and to crown all, a College in which youth might be fitted for public service in Church and State.*" Ten years after the founding of the colony, the General Court in New Haven appointed a committee to find suitable grounds to set apart for a college.

Integral to the Davenport scheme was that "the worship of God should be the only rule for ordering the affairs of government in the commonwealth." This led to the General Court of New Haven establishing the mosaic law as the basis for its legal system. The vote, or franchise, as well as the right to hold office was restricted to church members referred to as "freemen."

David Yale was not chosen as a member of the church at New Haven. Indeed, the tension in the Eaton household under the uncompromising rule of the Puritan Theophilus, had caused his mother to break down. Her strange behavior led to public trials and she was excommunicated from the church. Dissatisfied with the condition of life in New Haven, David Yale moved to Boston, married, and was appointed attorney for the Earl of Warwick. Here, Elihu was born April 5, 1649, shortly after news arrived of the trial and execution of King Charles I of England.

While in Boston, David Yale joined with Dr. Robert Child, Samuel Maverick, and others in challenging the theocracy of Massachusetts law and policy which was as rigid and intolerant as that in New Haven. They presented a Remonstrance, or petition, to the General Court in May 1646 which declared that "the Colony had no 'settled forme of government according to the lawes of England'; that no 'body of lawes' secures them enjoyment of their lives, liberties and estates, and no settled rules of judicature provide due process; for which many are in fear of arbitrary government."

The Court felt that David Yale had been misled by the other rebels. He was fined £30. The leaders had stiffer fines and were imprisoned. In 1652, when Elihu was three years old, his family sailed for England and soon after David Yale established himself in London.

Meanwhile, the serious intention of the New Haven colonists to establish a college had suffered a setback. The colony was going through hard times. Samuel Maverick wrote of New Haven in his "Description of New England (1660):"



Yale University

This Towne is the Metropolis of that Government, and the Government took its name from this Towne; which was the first built in those parts, many stately and costly houses were erected the Streete layd out in a Gallant forme, a very stately Church; but ye Harbour not proveing Comodious, the land very barren, the Merchants either dead or come away, the rest gotten to their Farmes. The Towne is not so glorious as once it was.

In 1652, a college at New Haven was brought up and voted on at a meeting of the General Court for the Colony. It was thought "to be too great a charge" for the "jurisdiction to undergo alone; especially considering the unsettled state of New Haven Town; . . . But if Connecticut do join, the planters are generally willing to bear their just proportions for erecting and maintaining a College there." Three years later, the Reverend Davenport encouraged the town to pass a vote appropriating £60 a year for the proposed institution.

Davenport also wrote to his old friend, Edward Hopkins, the governor of Connecticut, to request his aid in carrying out the work. Hopkins had gone to England to settle the estate of his brother, but died in London in 1657. In his will he provided a large bequest, "for the breeding up of hopeful youths, both at the Grammar School and College, for the public service of the country for future times." His wife, Anne, who suffered a "mental distress" as her mother did, was put in the care of her brother David Yale, and survived her husband by 40 years.

By 1660, public documents of the time spoke of the foundations begun for the institution as the "college already begun." But further difficulties kept the Hopkins College in New Haven from ever rising above the level of a grammar school.

Davenport's hope for establishing a church state, with a college "where youth's might be fitted for public service," was further eroded in 1665, when the colonies of Connecticut and New Haven were united. Davenport opposed this union on the grounds that "all government should be in the church and all freemen must be members in full communion."

But in the Connecticut Colony, the church had less of a stronghold, because voting in town affairs was open to orderly persons who owned property and were "admitted inhabitants." So with all hopes of establishing a church-state removed, in 1668 Davenport accepted an invitation to take charge of the First Church in Boston. Two years later, he died from a stroke.

At the close of the seventeenth century, an attempt was made by Connecticut Congregationalists to preserve orthodoxy and a high standard of education in the ministry, by devising a plan for the establishment of a college by a general synod of the churches. The college would be called "the school of the church" and the churches would contribute to its support.

According to Charles Henry Smith, in his *History of Yale University*, the project failed. "But the following year," he wrote, "ten of the principal ministers of the Colony were nominated and agreed upon by common consent, both of the clergy and the laity, to be Trustees, to found, erect and govern a college. . . . Seven of these men were identified with towns of the old New Haven jurisdiction."

Smith further explained that "the most active man among the promoters of the new scheme," the one he refers to as the founder of Yale, was Reverend James Pierpont (Harvard 1681), upon whom "Mr. Davenport's mantle had fallen." Not only was he following in Davenport's footsteps as the pastor of the First Church in New Haven, his wife was Davenport's granddaughter.

A meeting of the ten clergymen, held in Branford in 1701, is regarded as the beginning of Yale College. Tradition states that each laid on the table a few volumes, saying, "I give these books for founding a college in this colony." In deference to three clergymen of the original Connecticut Colony, the New Haven men agreed "for the present" to locate the college at Saybrook, so that "all parts of Connecticut Colony with the neighboring colony may be best accommodated."

In October 1701, the legislature met in New Haven and granted a charter "to certain Learned & Orthodox men upholding & Propagating the Christian Protestant Religion . . . for the founding, *suitably endowing* & ordering ■ Collegiate School within his Magisties Colony of Connecticut wherein Youth may be instructed in the Arts and Sciences who through the blessing of Almighty God may be fitted for public employment both in Church and Civil State."

It should be noted that up until 1745, a majority of the graduates became clergymen. And until the twentieth century, an unbroken chain of rectors (later presidents) of the college, as well as trustees (later fellows) at Yale, were ministers of the "orthodox" church, namely, Congregational ministers from Connecticut.

The college depended on an annual grant from the colony's legislature and tuition fees from the few students. This was insufficient to pay the rector's salary, and so the rector was authorized to continue work as pastor in Killingsworth. In 1702, the first student, Jacob Heminway of New Haven, began studies at the rector's house in Killingsworth. The commencement was held at Saybrook, where many of the college books were stored. Later students also studied at Killingsworth and ■ tutor was added to the staff.

By 1717, sufficient funds were raised for erecting the college building. Some trustees and patrons wanted the school to remain in Saybrook, and others wanted the building in Hartford, but the site chosen was New Haven. Following this decision, one tutor "established himself at once in New Haven, in charge of about a dozen pupils; the other, influenced by the Hartford Trustees, opened a rival school, with as many or more pupils in Wethersfield; . . . three or four pupils remained at Saybrook, under the care of a village pastor, a former tutor."

The college building was completed in 1718 in time for the commencement (torn down in 1782) and was built of wood. It was 170 feet long, 122 feet wide, and 3 stories high and stood facing College Street, near Chapel. It contained a library, kitchen, and 50 "studies," or rooms; in addition a dining hall extended across the building and was also used for prayers and public meetings. It cost about £1,000 sterling.

At the first public commencement in New Haven, the Collegiate School and building were named Yale College, to honor the primary benefactor, Elihu Yale. Meanwhile a rival commencement was held in Wethersfield. But the next year brought a reconciliation, with New Haven winning out.

Yale had made a fortune in private trade while serving as the governor of the East India Company's settlement at Madras. (His uncle, Governor Hopkins, had been a merchant with the East India Company.) Upon his return to London in 1699, he developed a reputation as a generous philanthropist, and later became active in the Anglican-dominated Society for the Propagation of the Gospel which was helping to fund American missionaries, particularly those to the Indians.

Shortly before commencement in 1718, news that Elihu Yale had donated books, paintings, and trunks of textiles reached the trustees. The estimated value was £800, and there were promises of more to come. This donation prompted the trustees to change the name of the Collegiate School to Yale College in time for the commencement.

Though Elihu Yale was reportedly elated, the people of Saybrook objected to the removal of the valuable collection of college books from their town. Over 800 volumes had been collected, largely through the efforts of Reverend Pierpont and Jeremy Dummer. The catalog of books included donations from Elihu Yale, and Sir Isaac Newton, who donated the second edition of his *Principia*, a copy of his book on optics, plus some Greek books. Additional donations were from the poet laureate Sir Richard Blackmore; Sir Richard Steele, the English essayist and playwright; Sir Francis Nicholson, the governor of Virginia; the British governor of the American Colonies, Sir Edmund Andros; as well as from the Society for the Propagation of the Gospel in Foreign Parts.

Disappointed at losing the college, the people of Saybrook were determined to hold onto the library. In the *History of Yale University*, Professor Charles Henry Smith reports on a demonstration in Saybrook:

The Governor and Council repaired to the scene of the disturbance, and ordered the Sheriff to take possession of the books. This he did, though not without encountering much resistance from the populace. To move the books to New Haven, it was found necessary to impress unwilling men, together with oxen and carts. During the night which followed this

exciting day, wheels were taken off the carts, and bridges were broken down on the way to New Haven, and worse than all, about a quarter of the books with many valuable papers disappeared and were never recovered.

An additional £100 in goods for the college was shipped out by Elihu Yale in February 1721 with assurances that an annual provision would take place after his death. However, when Yale died in July 1721, his will was contested, and his bequest to the college lost.

Along with endowing a foundation for one of America's great universities, many books Yale and the Society for the Propagation of the Gospel donated were of Anglican ideology which quickly bore fruit. The year following his death, the trustees of Yale College excused the rector of Yale, Reverend Cutler from further service following his declaration that he had converted to the Episcopal faith. The "dark cloud drawn over" their collegiate affairs was blamed on the library that had been sent over. The next rector, Reverend Elisha Williams was inducted after giving "Satisfaction of the Soundness of his Faith in Opposition to Armenian and prelatical Corruptions."

The course of studies at Yale College in the eighteenth century was similar to the course followed at Harvard. Latin was the language of ordinary conversation. Greek, Hebrew, logic, physics, metaphysics, and mathematics were staples in a scholar's instructional program. Rhetoric, ethics, and theology were also mandatory.

Shortly before the American Revolution, while serving as a tutor at Yale, John Trumbull wrote a satirical poem entitled *The Progress of Dullness*: "And yet, how oft the studious gain, The dullness of a lettered brain; . . . And plodding on in one dull tone, Gain ancient tongues and lose their own."

Unfortunately, policies at the college under president Thomas Clap (1740-66) were also narrowly sectarian. During his tenure, men were trained for orthodox ministry, to the exclusion of other professions and callings. This led to an attempt by the Connecticut legislature to assert visitorial power over the college.

To keep the state out of Yale, the trustees appointed Ezra Stiles as president; he placated the state by drafting a plan in July 1778 which would, according to John Whitehead in his *Separation of College and State*, "turn Yale from the narrow sectarian mold Clap advocated into a broadly useful institution." His plan was to move Yale from a college into a university, and he suggested that the state endow professorships of law and physics.

During the Revolutionary War, freshmen were moved to Farmington, and the sophomores and juniors to Glastonbury. The seniors remained in New Haven where a company of them were drilled on the green at New Haven by General George Washington. They escorted him "as far as Mill River" while he was on his way to take command of the American forces in Cambridge. Noah Web-

ster (Yale 1778) led the company "with music." Yale men were also at Bunker Hill, and Captain Nathan Hale (Yale 1773) was chosen by Washington to spy within the British camp on Long Island. In July 1779 New Haven and Yale's college buildings were taken by the British.

At the beginning of the nineteenth century, Benjamin Silliman was appointed professor of chemistry and natural history at Yale College and served from 1802 to 1853. Silliman assured trustees of his loyalty to Congregational tenets. Studies of rocks, soil, water, wildlife, as presented by Silliman, stayed within the prescribed bounds of religious dogma, yet inspired scores of students to consider careers in botany, zoology, geology, and chemistry.

Silliman's students included Amos Eaton, the founder of the Rensselaer Polytechnic Institute, and inventor Eli Whitney. Another student, Othniel Marsh became the first professor of paleontology at Yale. His uncle, George Peabody, funded the Peabody Museum of Natural History which, completed in 1876, houses Marsh's greatest memorial, the Dinosaur Hall.

In 1818, Silliman founded and became the first editor of the *American Journal of Sciences and Arts*. Ironically, scientific theories advanced by this publication challenged the rigid thinking of Christian orthodoxy, which held to the creationist theory. The scientific age was dawning and Silliman helped its advance.

The nineteenth century also brought fund drives and expansion to the college. Between 1701 and 1830 the college had received only about \$145,000 in total gifts and grants. Yale launched its first major fund drive in 1832. Deficits were wiped out and more than \$100,000 was brought into the treasury. That same year, the Trumbull Gallery was opened; it is considered the first art museum connected with an educational institution in America.

Money raised in 1835 was used to build a dormitory for theology students, and by 1846 a library building was completed at the cost of \$34,000. The Old Library was in use from 1889 to 1931, now called Dwight Memorial Chapel in commemoration of two presidents named Dwight. 1856 brought a deed of property from Joseph E. Sheffield, for the use of the scientific school. His gifts, bequests for equipment, and endowments exceeded \$1 million.

The bachelor of law degree was first conferred at Yale in 1843. By 1852, authorization was given to confer the degree of bachelor of philosophy, and the same year, a school of engineering was organized. In addition, the corporation voted in 1860 to establish the degree of doctor of philosophy as recommended by the faculty of the scientific school, "to retain in this country many young men, and especially students of Science who now resort to German Universities for advantages of study no greater than we are able to afford." In 1864 a professorship of modern languages was established, and the school of fine arts was opened to students in 1869. Yale became a university in 1872.

Meanwhile, growth continued: a master of arts degree was first conferred in 1876. And by 1892, the courses of the graduate department with the degree of Ph.D. was open to women; however it was not until 1969, that women were admitted as undergraduates.

As the nineteenth century drew to a close, many Yale alumni were among the entrepreneurs of the northeast, the rising industrial aristocracy of America. These alumni made it clear they wanted to see Yale move toward greater secular control, despite the belief that the Charter mandated that the president and fellows be Congregational ministers living in Connecticut.

Through a careful review of the revised charter of 1745, Simeon E. Baldwin, a professor of law at Yale discovered that the current charter made no reference to ministers, though the charters of 1701 and 1723 had. In 1881, he read a paper before the New Haven Colonial Historical Society, claiming that he "could find no necessity for either the President or another member of Yale Corporation being a clergyman." By 1910, the clergy lost their majority.

As Yale moved into the twentieth century, it experienced a brief decline in scholarship and a rise in extracurricular activities. Football, baseball, crew, and track were now rigorously disciplined. From 1872 to 1909 in soccer, rugby, and American football, the Yale teams ran up a record of 324 victories, 17 losses, and 18 ties.

The early 1930s brought the College Plan to Yale, ■ building boom which provided housing and dining facilities for all upper-classmen (freshmen live on the Old Campus), together with faculty offices, a master's house, and a library. The undergraduate residential college system was financed initially through a gift of Edward S. Harkness. Modeled after medieval English universities, primarily Oxford and Cambridge, today 12 residential colleges enable Yale to offer the intimacy of ■ small college environment as well as the vast resources of a major university.

Many other buildings constructed during this period were financed by John W. Sterling whose death in 1918 brought a bequest of \$15 million for new buildings, new professorships, and other worthwhile causes. Through his generosity the Sterling Chemistry Laboratory, Sterling Hall of Medicine, Sterling Power House, Sterling Memorial Library, Sterling Law Building, Sterling Divinity Quadrangle, Sterling Tower, Sterling Quadrangle, and the Hall of Graduate Studies were built.

During Yale's 250th celebration, in 1951, *Newsweek* noted that Yale had "a world reputation for excellence." *Time* magazine was enthusiastic about "Yale's whole interlocking curriculum, where psychiatrists teach in the law school, physicists rub elbows with philosophers, engineers teach in the medical school. At 250 years, Yale is more than ever what it has taken pride in being—a teaching institution."

From 1950 to 1963, Yale's endowment jumped from \$121 million to \$375 million under the leadership of

President A. Whitney Griswold, and 26 buildings worth over \$75 million were in process or completed when he died. The Yale of today, despite financial belt tightening, maintains its world-class reputation for excellence, while upholding (some would say “revelling in”) tradition.

Further Reading: Hiram Bingham’s *Elihu Yale, The American Nabob of Queen Square* (New York: Dodd Mead, 1939) is an authoritative biography that includes an outline of the Yale family involvement in New Haven and the college. *Yale, A Pictorial History*, by Ruben A. Holden (New Haven, Connecticut: Yale University Press, 1967) traces Yale from its beginnings in a small Connecticut farmhouse to the university of the late 1960s. A publication of the American Rev-

olution Bicentennial Commission of Connecticut, *Connecticut’s Seminary of Sedition: Yale College*, by Louis Leonard Tucker (Chester, Connecticut: Pequot Press, 1974) explores Yale’s involvement in the Revolutionary era of 1763 to 1787. *Yale: A History*, by Brooks Mather Kelly (New Haven, Connecticut: Yale University Press, 1974) studies the survival of the college as a center for intellectual life. *School of the Prophets, Yale College, 1701–1740*, by Richard Warch (New Haven, Connecticut: Yale University Press, 1973) deals primarily with the religious dimensions of the school and the society surrounding it.

—Genevieve C. Fraser

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NOTES ON CONTRIBUTORS

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Adams, Bob. Freelance writer. **Essay:** University of Pennsylvania.

Bachin, Robin F. Assistant Professor of History, University of Miami, Coral Gables, Florida. Contributor to *American Cities and Suburbs*, edited by Neil Larry Shumsky (1977). **Essay:** University of Chicago.

Bernasconi, Andrés. Freelance writer. **Essay:** (with Daniel C. Levy) University of Chile.

Bonnigal, Dorothee M. Allocataire Moniteur Normalien, University of Burgundy, Dijon. Contributor to *Interfaces* and the edited collection of essays *The Southernness of Eudora Welty* (1995). **Essay:** École Normale Supérieure.

Bosworth, Marla G. Freelance editor and writer. **Essays:** Oregon State University; University of Melbourne.

Bracken, Jeanne Munn. Reference Librarian, Lincoln Public Library, Lincoln, Massachusetts. Author of *Children with Cancer* (1986), *The Shot Heard Round the World* (1994), and *Iron Horses across America* (1995). **Essays:** Boston University; Philipps University of Marburg; Uppsala University.

Brandano, Phyllis. Freelance writer. **Essay:** Northeastern University.

Carson, Justine H. Partner, Carson and Associates. Editorial Director, Institute for Scientific Information (1987–92). **Essay:** Barnard College.

Chapman, Richard Allen. Freelance writer. Contributor to *American Political Science Review*. **Essays:** Reed College; United States Military Academy at West Point.

Chepesiuk, Ron Joseph. Associate Professor, Head of Special Collections, Winthrop University, Rock Hill, South Carolina. Author of *The Palmetto State: Stories from the Making of South Carolina* (1992) and *Sixties Radicals, Then and Now: Candid Conversations with Those Who Moved an Era* (1995). **Essays:** Atlanta University Center; Chinese University of Hong Kong; (with Mary Elizabeth Devine) Emory University.

Chowdhury, Sharmishtha Roy. Graduate student in modern French history, Northwestern University, Evanston, Illinois. **Essays:** Aligarh Muslim University; Jawaharlal Nehru University; Tata Institute of Fundamental Research; Visa-Bharati University.

Conley, Kathleen M. Assistant Professor, Reference Librarian, Illinois State University, Normal. **Essays:** Cornell College; Tulane University; University of Illinois.

Coyle, Bill. Staff Assistant, English Department, Salem State College, Salem, Massachusetts. **Essays:** Massachusetts Institute of Technology.

Devine, Mary Elizabeth. Professor of English, Salem State College, Salem, Massachusetts. **Essays:** (with Ron Chepesiuk) Emory University; (with Frank M. Jossi) University of Minnesota; University of Virginia; (with Diana D'India) Williams College.

D'India, Diana. Graduate student, Weston Jesuit School of Theology, Cambridge, Massachusetts, and teacher of basic writing skills, Boston Center for Adult Education, Massachusetts. **Essays:** Amherst College; (with Mary Elizabeth Devine) Williams College.

Dubovoy, Sina. Freelance writer. **Essay:** Al-Azhar University.

Dupee, Junelle. Freelance writer, consultant, and photographer. **Essays:** University of Arizona.

Ellingson, Stephen. Freelance writer. **Essay:** Hebrew University.

Emery, Theodore A. Freelance writer. **Essay:** University of Rochester.

Farrow, Christine. Freelance writer and photographer. Author of *The Coordinator's Handbook: A Guide for High School-Based Community Service Programs* (1991). Contributor to *Friends Journal*. **Essays:** University of Canterbury; Wellesley College.

Fraser, Genevieve Cora. Playwright and writer. **Essay:** Yale University.

Garduno, José María García. Freelance writer. **Essay:** (with Daniel C. Levy) National Autonomous University of Mexico.

Gerber, Judith B. Business and technical writer. Contributor to *Global Industry Profiles* (1996) and *American National Biography* (1998). **Essays:** Bryn Mawr College; University of Southern California.

Gladfelter, Sandra. Freelance writer. Contributor to *Back Home in Kentucky* and *Bluegrass*. **Essays:** University of Bordeaux; (with Susan R. Stone) University of Paris.

Goodin, Vera-Jane. Freelance writer. **Essay:** University of Missouri.

Heenan, Patrick. Independent researcher and writer. Contributor to *International Dictionary of Company His-*

ories (1993) and *International Dictionary of Historic Places* (1995–96). **Essays:** Doshisha University; Harvard University; Keio University; Laval University; University of Cambridge; University of Durham; University of Leiden; University of London; University of Tokyo; University of Toronto.

Hollister, Pam. Freelance writer. **Essays:** Georgetown University; Oberlin College; Princeton University.

Holtkamp, Wolfgang. Assistant Professor of American Literature, University of Stuttgart. **Essays:** Albert Ludwigs University; Free University of Berlin; Ruprecht Karls University.

Horowitz, Marcia R. Editorial Associate, Center for Creative Leadership. Associate Editor, *Issues and Observations*. **Essays:** Duke University; Vanderbilt University.

Hoyt, Christopher. Freelance writer. **Essays:** Columbia University; Dartmouth College; Gallaudet University; Howard University; Northwestern University; United States Naval Academy; Washington University.

Hudson, Christopher. Editor, Fitzroy Dearborn Publishers. Editor of *The China Handbook* (1997). **Essays:** Cooper Union for the Advancement of Science and Art; University of the South; Willamette University.

Isles, Mary Jane. Graduate student in English, Slippery Rock University, Slippery Rock, Pennsylvania. Contributor to *Poet Magazine*. Editor-in-Chief of *Ginger Hill* (1988–90). **Essay:** Rice University.

Jack, Sybil. Freelance writer. **Essay:** University of Sydney.

Jossi, Frank M. Freelance writer. Contributor to *Los Angeles Times*, *Chicago Tribune*, *Newsday*, and *Minneapolis Star Tribune*. **Essay:** (with Mary Elizabeth Devine) University of Minnesota.

Kane, Patrice M. Head of Reference and Special Collections, Fordham University, Bronx, New York. **Essays:** City University of New York; Mount Holyoke College; University of Mumbai (Bombay); Vassar College.

Lamontagne, Manon. Assistant Director, National Film Board of Canada. **Essays:** École National d'Administration; École Polytechnique; Federal Institute of Technology; University of Orléans.

Lamontagne, Monique. Independent researcher and writer. Contributor to *International Dictionary of Company Histories* (1991) and *International Dictionary of Historic Places* (1995–96). **Essays:** McGill University; University of Toronto.

LaRue, Sherry Crane. Assistant Dean of Students, Humanities Division, University of Chicago. Contributor to *International Dictionary of Historic Places* (1995). **Essay:** University of Louvain.

Lee, Joseph Edward. Professor of History, Winthrop College, Rock Hill, South Carolina. Author of *An Oral History of Investigative Journalism in America* (1996). **Essay:** Washington and Lee University.

Levi, A.H.T. Freelance writer and independent scholar. Buchanan Professor of French Language and Literature, University of St. Andrews, Fife. Author of *French Moralists: The Theory of the Passions 1585–1649* (1964), *Religion in Practice* (1966), and *Guide to French Literature 1789 to the Present* (1992). Editor of *Erasmus: Satires* (1986). **Essays:** Prefatory Essay; Jagiellonian University; University of Pisa.

Levi, Claudia. Freelance writer. **Essays:** Georgia Augustus University of Göttingen; Ludwig Maximilians University of Munich; University of Cologne.

Levy, Daniel C. Freelance writer. **Essays:** College of Mexico; (with José María García Garduno) National Autonomous University of Mexico; (with Marcela Molis) University of Buenos Aires; (with Andrés Bernasconi) University of Chile.

Maciuba-Koppel, Darlene. Freelance writer and marketing consultant. Author of *Telemarketer's Handbook* (1992). **Essays:** Rutgers: The State University of New Jersey; State University of New York.

Margerum, Christine. Freelance writer. **Essay:** University of Granada.

Margerum, Edward S. Freelance writer. **Essay:** University of Aberdeen; University of Edinburgh.

McNulty, Mary. Freelance writer and editor. Editor, American Association of Law Libraries newsletter, 1988–93. **Essays:** Johns Hopkins University; St. John's College; University of Barcelona.

Mertz, Cindy. Research assistant, Wayne State University, Detroit, Michigan. **Essays:** Michigan State University; University of Salamanca; University of Seville.

Mollis, Marcela. Freelance writer. **Essay:** (with Daniel C. Levy) University of Buenos Aires.

Mundt, Michael. Freelance writer and editor. **Essays:** (with Fran Sherman) Brandeis University; Federal University of Rio de Janeiro; National University of San Marcos.

Nery, Sharon Messinger. Freelance journalist. **Essays:** University of St. Andrews; University of Vienna; Weizmann Institute of Science.

Newman, Robert S. Retired professor of anthropology. Author of *Grassroots Education in India: A Challenge for Policy Makers* (1989). Contributor to *Canadian and International Education*. **Essay:** Indian Agricultural Research Institute.

Noble, Bette. Freelance writer. **Essay:** Kyushu University.

Ogorek, Cynthia L. Historian, Washington and Jane Smith Home, Chicago, Illinois. Contributor to *Historical Encyclopedia of Chicago Women* (forthcoming). Managing Editor, *Creative Woman* (1989–91). **Essays:** Aarhus University; Loránd Eötvös University.

Olson, Antonella D. Senior Lecturer, Department of French and Italian, University of Texas, Austin. **Essay:** University of Florence.

Oswald, April A. Freelance editor and writer. English teacher, Hangzhou University, China, 1992–93. **Essay:** Beijing University.

Paterson, Anne C. Senior Editor, Ferguson Publishing, Chicago, Illinois. **Essays:** Illinois Institute of Technology; Purdue University; University of Oxford.

Phillips, Michael D. Freelance writer. **Essay:** University of Alcalá de Henares.

Picozzi, Michele. Principal, MP Creative Services. **Essays:** Smith College; University of Witerwatersrand.

Pittman, Ruth. Freelance writer. Author of *Roadside History of California* (1995). **Essays:** Antioch University; Case Western Reserve University; Ohio State University.

Price, Karen. Freelance editor and writer. **Essays:** College of William and Mary; University of Manchester.

Rees, Warren D. Freelance writer. **Essay:** University of Michigan.

Rillema, Beth A. Freelance writer. **Essays:** Brigham Young University; University of Notre Dame; University of Washington.

Rogozinski, Jan. Freelance writer. Author of *Pirates! Brigands, Buccaneers, and Privateers in Fact, Fiction, and Legend* (1995) and *A Brief History of the Caribbean: From the Arawak and the Carib to the Present* (1992). **Essay:** University of Iowa.

Sautter, Udo. Professor of History, University of Windsor, Ontario. Author of *Three Cheers for the Unemployed: Government and Unemployment before the New Deal* (1991). **Essay:** Eberhard Karls University of Tübingen.

Schoenberg, Robert P. Writing Instructor, Buffalo State College, New York, and Niagara University, New York; freelance translator and writer. Co-translator of *Moscow Racetrack*, by Anatoly Gladilin (1991). **Essays:** M.V. Lomonosov Moscow State University; New School for Social Research; University of Copenhagen.

Sherman, Fran Shonfeld. Freelance writer. Contributor to *Britannica Book of the Year* and other general reference works. **Essay:** (with Michael Mundt) Brandeis University; Technion—Israel Institute of Technology; Tufts University; University of Glasgow.

Shilakowsky, Carol. Freelance journalist. **Essays:** Charles University; Humboldt University; Leipzig University; Martin Luther University of Halle-Wittenberg; Strasbourg University; University of Wales.

Steffensen, Jan Bitsch. Freelance writer. **Essay:** Aalborg University.

Stone, Susan R. Freelance writer. **Essay:** University of Montpellier; (with Sandy Gladfelter) University of Paris.

Strickland, Charlene. Technical Editor, Science Applications International Corporation, Albuquerque, New Mexico. **Essay:** Claremont Colleges.

Sullivan, James. Freelance writer. **Essays:** Stanford University; University of California.

Sultan, Rosemarie Cardillicchio. Freelance writer. **Essays:** National University of Ireland; Radcliffe College; University of Cape Town.

Sutliff, Laura. Managing Editor, *Voice*. **Essay:** California Institute of Technology.

Taggart, Elizabeth. Writer, editor, graphic designer, and owner, Spark Communications. **Essays:** Seoul National University; University of Texas System.

Tegge, Jeffrey M. Associate Editor, *New Standard Encyclopedia*. Contributor to *International Dictionary of Historic Places* (1995). **Essay:** University of Coimbra.

Tew, J. Cameron. Freelance writer and journalist. **Essays:** Complutense University of Madrid; Guilford College; University of North Carolina at Chapel Hill.

Urbiel, Alexander. Freelance writer. **Essay:** Indiana University.

Voyer, Celeste A. Owner, M and J Marketing Services. **Essay:** Brown University.

Watts, Tim J. Humanities Bibliographer, Kansas State University, Manhattan. **Essays:** University of Aix-Marseille; University of Poitiers.

White, Lawrence William. Postgraduate researcher and writer, University of Dublin Trinity College, School of English. **Essay:** University of Dublin Trinity College.

Whitney, Carol. Lecturer in English, Tufts University. **Essay:** India Institutes of Technology.

Wilder, Joan. Freelance journalist and copywriter. **Essay:** New York University

Wilson, Melanie. Freelance writer. **Essays:** University of Siena; University of Valencia.

Wippel, Wendy Sowder. Research Biologist. Contributor to *Lancet* and *Journal of Bone and Joint Surgery*. **Essays:** The Citadel; Cornell University; University of Wisconsin.

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